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ABSTRACT

The purpose of the Neighborhood Education Center (NEC) Project, funded under Title III of the 1965 Elementary Secondary Education Act, is to significantly raise academic achievement in the areas of language arts and computational skills. The NEC encompasses four elementary schools in Region 8 of the Detroit Public Schools system. This region serves approximately 75,000 persons, providing direct service to a pupil population of 31,000. Enrollment in Region 8 schools is predominantly black. The following are some of the features unique to schools in the NEC Project: (1) Instructional plan that embodies the concept of individualization of instruction in a manner that provides diagnostic and prescriptive assistance to each pupil; (2) Teachers and pupils are organized in a series of instructional units with four teachers to each group of 66 pupils; (3) Teachers are recruited and assigned on the basis of demonstrated expertise and commitment to the critical conceptual and operational elements of the project; (4) Duly elected community representatives serve on Planning and Evaluation Councils with direct access to the educational process; and, (5) There is an intensive and extensive program of in-service education during regular and after-school hours. (Author/JM)

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NEC project

UD 012358

THE CRITICAL CONCEPTUAL AND
OPERATIONAL ELEMENTS OF THE
NEIGHBORHOOD EDUCATIONAL CENTER

1

FOREWORD

"From book-centered, through child-centered and into life centered schools – this has been the progress of our dominant educational thinking and experience during the first five decades of our twentieth century."

Edward G. Olsen

In recent years we have come to realize however slowly or even reluctantly, that the "community school" is no passing educational fad. On the contrary, it represents a fruitful and essential extension of accepted educational thinking and practice. We know now that school instruction and guidance must be far more closely related to community life processes and needs than it has been in the past. If this is not done, there is little hope of strengthening American and world democracies through education. Since we are highly resolved to nourish, invigorate and to extend democracy, we must recognize that community study and service through school education is here to stay. This movement is the most significant single development of its kind in our generation and it seems destined to grow greatly with continuing sound experimentation of all school levels, in all teaching fields, with all types of students and in all community areas; local, regional, national, and international.

The central administration of the Detroit Board of Education envisioned a community school when they named this federally funded project the Neighborhood Educational Center.

Personnel selected for these four schools, Bell, Berry, Field and Field Annex, had to be committed to the philosophy that young people will become responsible participants in community life only as they experience emotionally satisfying, socially creative, and intellectually stimulating activity in those communities during their formative years.

The NEC schools exhibit to a marked degree the following characteristics:

1. Many of the educational experiences grow out of and are developed in terms of life in the community.

2. Pupils participate in the activities of community living.

3. The people of the community play a significant role in the determination of the program and policies of the schools through the Planning and Evaluation Councils. The members of these councils are community people who are democratically elected.

4. The schools are an important part of the total program of community living.

5. The facilities of the schools are used by the people of the community to carry on desirable aspects of community living.

6. The schools utilize resources in the community that contribute significantly to the learning activities.

7. The school personnel concern themselves with the activities of the pupils outside of the schools so that life may be rich and may be coordinated with the pupil's life in the school.

It is through this community school approach that we in the NEC Project, through the coordination of related activities, are hopeful of improving the quality of education of our students while at the same time we are improving the quality of living for all citizens of the community.

The means by which the NEC seeks to reach these goals are outlined in this document. Originally, it was written as the NEC Curricular Task Force Report and was published in January, 1970. During

the 1970 Summer Workshops the Report was revised and republished, no longer as a committee report, but as the statement of what the project is and how it operates. This edition of the basic NEC document has been slightly revised to make it current, but it is essentially the same as the previous one.

Dr. Norman V. Fuqua,
Region 8 Superintendent

Mrs. Carnie Greene
NEC Project Director
September, 1971

ACKNOWLEDGEMENTS

The scope and quality of this documentation of the critical conceptual and operational elements of the NEC Project represents the cooperative effort of both administrative and instructional personnel assigned to the NEC Project.

A deep appreciation is extended to those school personnel who served as members of the NEC Curricular Task Force and its various sub-committees. It was this grouping of educators that formulated the major documentation of the project's advocated conceptual and operational elements in January, 1970.

The directors of the project-wide workshops conducted during Summer, 1970, are recognized for the quality of leadership which they provided in directing the collection, coordination, and assessment of inputs received from personnel in the project related to possible deletions and modifications of and additions to the NEC Curricular Task Force's treatment of the project's critical conceptual and operational elements. It was this leadership demonstrated in response to their collective and singular tasks which sparked the efforts of all personnel who participated in the preparation of this report.

A debt of gratitude is acknowledged to those teachers who served in the special role of Teacher Coordinator during the Summer, 1970 in-service education workshops. Their dedication and proficient application of their expertise in the development of this report is creatively reflected in the various sections of this report.

The teachers who served on the various committees of the workshop are acknowledged not only for their provision of valuable inputs, but also for their effective reviews and refinement of such inputs. Such efforts are additional evidence in support of the premise that if teachers are permitted to function in an atmosphere that is conducive to creativity, they will respond in a creative manner.

The four NEC Principals gave freely and wisely of their services in the provision of inputs for consideration in the preparation of this report. Again, the NEC Principals have clearly demonstrated a major strength of the project: the high level of both professional and personal compatibility between administrative and instructional personnel.

Those who had an opportunity to share views with Dr. Ralph W. Tyler, as he carried out his role as the major consultant to the NEC Project and to the NEC Curricular Task Force, have profited not only from his wisdom and broad professional experiences but also from his personal warmth and sensitivity. The NEC Project owes a debt of gratitude to Dr. Tyler for his willingness to commit time from his extremely pressing schedule of professional commitments to give assistance to NEC Project personnel.

An expression of gratitude is extended to Dr. Norman V. Fuqua, Region Eight Superintendent. Dr. Fuqua gave both administrative support and encouragement to the establishment of the NEC Curricular Task Force and to its deliberations. The atmosphere established by Dr. Fuqua made it possible for the Task Force to carry on its responsibilities in a creative and in an effective manner.

The following persons in January, 1970, constituted the NEC Curricular Task Force:

1. Mr. Therman Smith, Principal, Bell School (Chairman)
2. Mr. Ray Pruett, Principal, Berry School
3. Miss Helen Martellock, Principal, Field School
4. Mrs. Helen Adams, Principal, Field Annex School
5. Mrs. Lavinia Wingo, Curricular Assistant Principal, Field School
6. Mrs. Sarah Gibson, Curricular Assistant Principal, Bell School
7. Dr. Paula Dent, Curricular Assistant Principal, Field Annex

8. Mrs. Alma Greer, Teacher, Bell School

9. Mrs. Betty Lackey, Teacher, Field School

10. Mr. Julian Williams, Teacher, Field Annex School

11. Mr. Ivery Harvey, Teacher, Berry School

12. Mr. William Grogan, NEC Curriculum Lab

13. Mr. Sheldon Sofer, Assistant Director, Program Development

14. Mr. Sol Dunn, Curricular Assistant Principal, Bell School

15. Dr. Hugh J. Scott, Region Assistant, Project Administrator

16. Dr. Ralph Tyler, Project Consultant

17. Dr. Lois Holland, Research Consultant

18. Mr. Herman Koss, Administrative Aide to Task Force

19. Mrs. Nancy Lindgren, Teacher, Field School

The following persons served on the various sub-committees of the NEC Curricular Task Force:

MATH
William Grogan, NEC Curr. Lab, Chairman
Edward Hunter, Field School
Walter Taylor, Field Annex
Delbert Sanders, Berry School
Jacqueline Brown, Bell School
Otis Stanley, Region 8
Marsha Storey, Berry School

LANGUAGE
Sarah Gibson, Bell (Chairman)
Lavinia Wingo, Field School
Anna Milner, Field Annex School
Justine Wiley, Berry School
Thelma Ballard, Bell School
Robert Nagle, Communications Skills Center
Eleanor Simowski, Region 8
Thelma McCrary, Berry School

CONTENT
Helen Adams, Field Annex (Chairman)
Helen Felton, Field School
Gloria Williams, Field School
Theresa Mazzei, Field Annex
Anita Fennessey, Berry School
Bettyann Sankar, Bell School

ORGANIZATION
Ray Pruett, Berry (Chairman)
John Glover, Field School
Barbara Crane, Field Annex School
Gerald Ernatt, Berry School
Louise Adams, Bell School
Betty Lackey, Field School

ROLE DEFINITION
Ivery Harvey, Berry (Chairman)
Pazetta Wiley, Field School
Winifred Sanford, Field Annex
Julian Williams, Field Annex
Grace Logan, Berry School
Dorothy Howze, Bell School
Margaret Dixon, Field School

IN-SERVICE EDUCATION
Helen Martellock, Field School (Chairman)
Charles Washington, Field School
Erlaine Taylor, Field-Field Annex
Esther Moseley, Bell-Berry Schools
Bernice Green, Bell School
Jessica Hale, Field Annex School

METHODOLOGY
Therman Smith, Bell (Chairman)
Alice Miller, Field School
Eulah Clarke, Field Annex
Laura Taylor, Berry School
Helen Waldron, Bell School
Robert Nagle, Communications Skills Center
Lavinia Wingo, Field School
Sarah Gibson, Bell School

EVALUATION
Paula Dent, Field Annex (Chairman)
Sam Farrow, Field School
Nancy Lindgren, Field School
Theresa Lorio, Field Annex School
Thelma McCrary, Berry School
Alma Greer, Bell School
Harold Rennecker, Communication Skills Center

The following persons were participants in the Summer, 1970 in-service education activities of the NEC Project:

DEVELOPMENT OF DIAGNOSTIC INSTRUMENTS AND PROCESSES

Director: Dr. Paula Dent, CAP, Field Annex School

Consultants: Dr. Lois Holland, Title III Research Assistant
Mr. Robert Nagle, Communication Skills Center

Teacher Coordinators: Mrs. Alma Greer, Bell School
Miss Lucretia Payton, Bell School
Mrs. Virginia Nightingale, Field School
Mrs. Theresa Lorio, Field School
Mrs. Rosemary Clemmons, Communications Skills Center

Teachers: Mrs. Laura Taylor, Berry School
Mrs. Louise Adams, Bell School
Miss Eulah Clarke, Field Annex School
Miss Kathleen Phillips, Field School

DEVELOPMENT OF MATH BEHAVIORAL OBJECTIVES:

Director: Mr. Delbert Sanders, CAP, Berry School
(Edward Hunter, Final Week)

Consultants: Mr. Otis Stanley, Math Demonstration Teacher, Region 8

Teacher Coordinators: Mr. Edward Hunter, Field School
Miss Patricia Weiler, Field Annex School
Mrs. Mildred Singleton, Berry School
Mrs. Jacqueline Brown, Bell School

Teachers: Mrs. Jessie Harris, Field Annex School
Mrs. Lula Goodson, Field Annex School
Mrs. Malaney Baptiste, Bell School
Mr. Larry Rogers, Berry School
Mr. Earl Price, Berry School
Mr. Ronald Blivins, Berry School
Mrs. Shirley Richards, Berry School

Mrs. Sharon Yuille, Field School
Mrs. Joan Small, Field School

WORKSHOP ON THE DEVELOPMENT OF INDIVIDUALIZED INSTRUCTION

Directors: Mrs. Lavina Wingo, CAP, Field School
Mrs. Thelma McCrary, CAP, Berry School

Teacher Coordinators: Miss Carolyn Calvin, Berry School
Mrs. Nancy Lindgren, Field School
Mrs. Helen Lothery, Bell School
Mr. Luther Washington, Berry School
Mr. John S. Richards, Berry School
Mr. William Roccos, Field School

Teachers:

Bell: Mrs. Georgia Henderson
Mrs. Dorothy Skelton
Mrs. Annette Baker
Mr. Beulah Desobry
Mrs. Doris Trammel

Berry: Miss Dorothea Hunter
Mrs. Tessie Bush
Mr. Frank Andrews
Mrs. Helen Huber
Miss Marjorie Beecher
Mr. Lester Byars
Mrs. Sharon O'Keefe
Miss Laurie Woods
Miss Bernadette Chmiel

Field: Mrs. Winifred Madsen
Mrs. Alice Miller
Miss Roberta Colville
Mr. Gary Murphy
Mrs. Alice Coleman
Mr. John Glover
Mrs. Ethel Viney
Mrs. Arbutus Johnson
Mrs. Lorene Fuller

Field Annex: Miss Theresa Mazzei
Miss Barbara Crane
Mrs. Mary Cooper
Mr. William Luxmore
Mrs. Delores Killens
Miss Helen Zoltek
Miss Rita Schendel

WORKSHOP ON THE DEVELOPMENT OF LANGUAGE BEHAVIORAL OBJECTIVES

Director: Mrs. Margaret Dixon, CAP, Field School

Consultants: Mrs. Sarah Gibson, CAP, Bell School
Mrs. Eleanor Simowski, Reading Demonstration Teacher, Region 8

Teacher Coordinators: Mr. Ivery Harvey, Berry School
Mrs. Thelma Ballard, Bell School
Mrs. Winifred Sanford, Field Annex School
Mrs. Josephine Sexton, Field Annex School
Mrs. Juanita Ogletree, Field Annex School
Mrs. Anna Milner, Field Annex

Teachers:

Bell:
Mrs. Dorothy Howze
Mrs. Lureada Gardner
Mrs. Corliss Floyd

Berry:
Mrs. Naomi Maxwell
Mrs. Marguerite Allen
Mrs. Delphine Sullivan
Mrs. Mary Stewart

Field:
Mrs. Estelle White
Mrs. Pazetta Wiley
Miss Anita Rutherford
Mrs. Gloria Fort
Miss Stella Coffey
Mrs. Gloria Patterson
Mrs. Lucille Weathington
Mr. Hyams Baptiste
Mrs. Jane Reveley
Mrs. Sharon Zammit

Field Annex:
Mrs. Bertha Dawson
Miss Marion Villard
Mrs. Vivian L. Davis

TABLE OF CONTENTS

FOREWORD i

ACKNOWLEDGEMENTS iii

PARTS PAGE

ONE: CAPSULE DESCRIPTION OF NEC PROJECT 1

TWO: GUIDE TO THE INDIVIDUALIZATION OF INSTRUCTION 10

SECTION I: METHODOLOGY 10
SECTION II: APPLICATION OF METHODOLOGY 11

THREE: BEHAVIORAL OBJECTIVES 20

SECTION I: LANGUAGE OBJECTIVES 21
SECTION II: MATH OBJECTIVES 47

FOUR: DIAGNOSTIC AND PRESCRIPTIVE PROCESSES 67

SECTION I: DIAGNOSIS 67
SECTION II: PRESCRIPTIONS 82

FIVE: CONTENT, ORGANIZATION, & ROLE DEFINITION 85

SECTION I: CONTENT 85
SECTION II: ORGANIZATION 87
SECTION III: ROLE DEFINITION 90

SIX: IN-SERVICE EDUCATION 96

SECTION I: CLUSTER MEETINGS 97
SECTION II: STAFF MEETINGS 98
SECTION III: IN-SERVICE EDUCATION COMMITTEES 99
SECTION IV: WORKSHOPS, CONSULTANTS, & VISITATIONS 100
SECTION V: PROJECT-WIDE AND LOCAL-SCHOOL WORKSHOPS 101
SECTION VI: ORIENTATION OF NEW STAFF 102

SEVEN: COMMUNITY INVOLVEMENT 103

EIGHT: EVALUATION AND GLOSSARY OF TERMS 110

SECTION I: EVALUATION 110
SECTION II: GLOSSARY OF TERMS. 119

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PART ONE: A SUMMARY OF THE CRITICAL PRACTICES, PROCEDURES AND PERSONNEL OF THE NEC PROJECT

Education in America is big business. The public school is the one institution in which society has pooled its funds hoping to gain benefits which will redound to all. Education is one means, if not the chief means, through which the individual may improve his socio-economic status. Schools have become the major institution not only for preparing people, but for the selection and placement of people into the various positions in society. The level of entrance into the occupational world is strongly predetermined by the level that is achieved in the educational world.

No school system in America has accomplished more than a minute fraction of what needs to be done in order to eliminate and to rectify those socio-economic forces that deny to America's poor and to a vast number of America's blacks any reasonable opportunity for quality education. The flight of both black and white Americans from urban public schools and the increasing gap in achievement between those schools in predominantly black populated areas are both demonstrative evidence of the depreciating status and the declining quality of urban public schools. If the public schools of this nation are to be positive agents for actualizing the "American Dream," then the factors of race and/or socio-economic condition cannot be permitted to remain the heaviest determiners of success or lack of success in urban public schools.

The successes of individual programs of compensatory education have been outweighed by the general failure of programs of compensatory education. The general failure of compensatory education in public schools can be attributed to many factors: too little funds, uncoordinated programmatic efforts, lack of commitment and understanding by school personnel, irrelevant programs, projects spread too thin, shortage of experienced and dedicated school personnel, etc. The Detroit Public Schools through its Neighborhood Educational Center (NEC) is attempting to thwart the internal and external factors that have produced programs of compensatory education that are either shallow successes or dismal failures. The NEC Project is structured to provide that necessary combination of experienced and committed school personnel, sufficient funding, relevant innovative instructional methods and programs, and an aroused and involved community.

BACKGROUND INFORMATION

On March 12, 1968, Dr. Norman Drachler, Superintendent of Schools announced to the members of the Board of Education that the Detroit Public Schools had been allocated the largest single Title III grant thus far delivered to a school district. The Board of Education and other school officials had made several appearances before federal officials to urge the allocation of federal funds to provide for a highly concentrated innovative educational program that could make a difference in a specific inner-city school area. Dr. Drachler stated:

> The NEC grant reflects an increasing determination by both federal and city officials to focus money sharply on a limited number of disadvantaged children. When federal money is spread over a large number of children as it has in the past, we can at best produce excellent models but we cannot be expected to produce great academic gains. Now for the first time, federal funds are being used by educators to find out how much it will cost to move disadvantaged children in a target area into the average range of scholastic achievement.

Other key personnel involved were:

Dr. William Simmons — Deputy Superintendent — Division of Governmental Relations and Fiscal Planning

Dr. Louis Monacel — Assistant Superintendent DPS — Office of Federal, State, and Special Programs — Division of Governmental Relations and Fiscal Planning

Mr. Herschel Fort — Divisional Director — Department of Program Development

Mr. Sheldon Sofer — Assistant Director for Department of Program Development

Mr. John Codwell — Assistant Director for Department of Program Development

Mr. Julian Bass — Administrative Assistant, Department of Program Development

Mrs. Mary Ellen Riordan — President — Detroit Federation of Teachers

NEC PROJECT SCHOOLS

The Neighborhood Educational Center encompasses four elementary schools in Region 8, one of eight administrative districts in the Detroit Public Schools system. This region serves approximately 75,000 persons, providing direct service to a pupil population of 31,000. Enrollment in Region 8 schools is predominantly black.

The Neighborhood Educational Center (NEC) is represented by the following four schools:

1. Bell Elementary, 7600 Goethe
2. Berry Elementary, 6600 Benson
3. Field Elementary, 1100 Sheridan
4. Field Annex Elementary, 1413 Field

As of June, 1971, the NEC Project had the following distribution of pupil population and instructional and administrative personnel:

SCHOOL	PUPILS	TEACHERS	ADMINISTRATORS
Bell	123	26	3
Berry	603	43.6	4
Field	654	45.4	4
Field Annex	318	25.6	3
Totals	1998	140.6	14

ADMINISTRATION OF PROJECT

The first administrator of the project was Dr. Hugh J. Scott who is now Superintendent of Washington, D.C. Public Schools. The present administrator of the NEC Project is Mrs. Carnie B. Greene who is directly responsible to Dr. Norman V. Fuqua, the Region Eight Superintendent. Dr. Fuqua has given administrative support and encouragement. All principals and other school personnel assigned to the NEC Project come under the direct administration of the NEC Project Director.

FUNDING

The NEC was originally funded under Title III of the Elementary and Secondary Education Act for $6,000,000 for a three year period from June, 1968 through June, 1971. However, the allocation for 1969-70 was cut from $2,000,000 to $1,194,000 and the 1970-71 allocation was for $1,500,000, so that in the event, the actual Title III funding was cut by one quarter. Some of these cuts were partially made up by the Detroit Public Schools from other sources.

EVALUATION

Evaluation of the NEC Project has been performed by the Department of Federal Project Research of the Detroit Public Schools and by the American Institutes for Research (AIR). As the contracted agent for evaluation, AIR has provided reports for the first and second years of operation, and will publish a final report. These are AIR's specific responsibilities:

1. Assess the degree to which the behavioral objectives in language and computational skills are being attained by pupils. (This measurement will be accompanied by the development and application of mastery tests related directly to specific or sets of behavioral objectives. Such assessment instruments are generally termed criterion-reference tests.)

2. Assess the level of general achievement in the Project as measured by the SAT. (The SAT is generally termed a group-reference test. The SAT will be used to compare achievement in the NEC Project with other schools both within and outside of the Detroit Public Schools.)

GOALS OF THE PROJECT

Our project goal is to significantly raise academic achievement in the areas of language arts and computational skills. Our ultimate aim is grade-level performance from each instructional unit on standardized tests.

SPECIAL FEATURES

The following are some of the features unique to schools in the NEC Project:

1. Instructional plan that embodies the concept of individualization of instruction in a manner that provides diagnostic and prescriptive assistance to each pupil.

2. Teachers and pupils are organized in a series of instructional units referred to as clusters with 4 teachers to each group of 66 pupils.

3. Each of the four schools have two assigned Curricular Assistant Principals. They provide direct implementation of the critical conceptual and operational elements of the Project.

4. Two Home Curriculum Specialists with responsibility for providing direct assistance to parents in the home environment.

5. Teachers recruited and assigned on the basis of demonstrated expertise and commitment to the critical conceptual and operational elements of the project.

6. An intensive and extensive program of In-Service education during regular and after-school hours.

7. A Curriculum Laboratory Specialist is assigned to a Curriculum Laboratory which services only the NEC Project Schools. He is responsible for the administration of the facility and services of the Curriculum Laboratory and works directly with teachers and administrators in the development of curriculum and instructional materials.

8. Class size reduced from an average of 34 pupils per classroom to 22 pupils per classroom in the various clusters.

9. Liberal funding for the purchase and flexibility in the selection of instructional materials.

10. Forty additional classroom units have been added to the NEC Project Schools in the form of transportable units.

11. Four Instructional Media Specialists assigned to the four Instructional Media Centers in each elementary school. The four Media Specialists in the NEC Project are experienced school librarians; they are knowledgeable in the fields of child growth and development, the learning process, and curriculum development. The Media Specialists work closely with other teachers in the planning of units of instruction, as resource consultants and materials specialists, as coordinators of professional book collections, and as instructors to teachers and students in the use of Media Centers for the best correlation with the curriculum.

    The operational format for utilization of the Media Center in each school stems from the basic philosophy of the Center as a means of supporting the instructional program by providing easily accessible learning materials of all kinds: filmstrips, records, tapes, overhead transparencies, etc. Classes or groups of pupils may be scheduled into the Center by appointment. Small groups of pupils or individual pupils may use the resources of the Center at any time. The Media Centers are utilized primarily on a non-scheduled basis to provide maximum accessibility to all pupils. Cluster teachers and specialists work with the Media Specialist in establishing an operational format which best satisfies the fulfillment of the function of the Media Center.

12. The Communication Skills Center (CSC) is an experimental reading improvement center funded under Title I of ESEA. The CSC is staffed by personnel who have demonstrated their expertise in the related areas of reading improvement. The four elementary schools in the project receive the total services offered by the CSC. The CSC provides diagnostic service to the project and tutorial assistance to pupils in project schools. The CSC gives special emphasis to the reading difficulties of those pupils who are diagnosed as representing the most severe cases of reading retardation in the project. The staff of the CSC through consultations with teachers and administrators in the project and through direct involvement in local school and project-wide-in-service education activities functions as an integral part of the NEC Project.

13. Cooperatively developed structure for staff involvement in the decision making process in the NEC Project.

14. Duly elected community representatives serving on Planning and Evaluation Councils with direct access to the educational process.

15. NEC Project is thoroughly integrated into administrative structure of the Detroit Public Schools.

INSTRUCTIONAL RATIONALE

The NEC Project is committed to the task of successfully establishing an effective systematic program of individualized instruction which is viewed as the process of identifying needed skills (diagnosis) and designing learning activities specifically for these needs (prescription). Individualization of instruction is an approach to the teaching-learning process designed to provide more effectively for the range of individual differences to be found among pupils within a classroom. Each pupil is expected to proceed at his own rate in the development of those skill areas in which he is diagnosed as deficient rather than to be expected to progress at a rate established for all pupils. The individualization of instruction does not require that the grouping for instruction needs to be on a one-to-one basis, but a one-to-one relationship will at times be necessary.

The essential components of the instructional rationale are the following:

1. *Behavioral Objectives:* A listing of behavioral objectives in math and language has been established as the basic instructional reference in these two areas. This listing of sequentially ordered behavioral objectives represents an extensive coverage of the skills essential to successful achievement in reading and math.

2. *Diagnosis:* Diagnosis indicates the point at which instruction should begin for a particular pupil in any given skill area. The entire diagnostic process functions to provide accurate information relevant to what skills a pupil has or has not attained at a given point in time.

3. *Prescription:* A prescription is the identification of the sequential steps of learning experiences proceeding from simple to complex and logically planned to achieve an objective. The prescription is an outline of those tasks to be accomplished in the acquisition of those skills associated with a particular behavioral objective.

4. *Application:* Application is the process by which the teacher manages the grouping of pupils and provides the instructional procedures and materials relevant to the individual needs of each pupil. Application is the teacher's systematic approach to the resolution of those tasks to be accomplished as stated in the prescription.

5. *Assessment:* Assessment is the process by which the individual pupil's level of mastery in the acquisition of skills stated in the behavioral objectives is ascertained.

CLUSTER UNITS

DEFINITION: A cluster is an organizational unit for instruction composed of teachers and pupils in which the responsibility for providing instruction is jointly shared by the members teaching team.

A cluster is generally structured with four teachers assigned to sixty-six pupils housed in three classrooms. The pupils in each of the classes within the cluster are grouped heterogeneously, however, because the groups of pupils within each grade level may not be composed of units of sixty-six pupils, cluster may vary in size and composition.

The following are those special aspects of the instructional process that constitute the essential elements of the methodological rationale for teachers in a cluster:

1. Learning experiences for each student are developed as a result of the educational implications of diagnostic information.

2. Teachers in the clusters establish an ongoing evaluative process to assess pupil growth and development.

3. Sufficient instructional materials are provided and used by teachers to implement the individualization of instruction.

4. Fupil records are maintained and are individualized with respect to relevant personal information and performance needs and attainments.

5. Teachers assigned to the cluster jointly plan and evaluate learning experiences for pupils in the cluster.

6. Within the cluster, pupils are inter-changeably grouped because of their needs for similar individualized learning experiences.

7. Teachers in the cluster are scheduled to meet at least once a week with the Curricular Assistant Principal.

8. The teaching schedule provides for the teachers in a cluster to meet as a unit twice a week for purposes of group planning and evaluations.

9. Teachers assigned to the cluster each have instructional contacts with pupils other than those assigned to their specific classrooms.

10. Pupils are heterogeneously constituted into the various classrooms of the cluster.

11. Objectives for pupils are stated in terms of behavioral goals.

CLASS SIZE REDUCTION

Without the availability of Title III funds to the NEC Project, the average class size in the elementary schools would be 34 pupils per classroom and each teacher would have 3 coordinating periods of 40 minutes each week. Title III funds have reduced class size to 22 pupils per classroom with an additional teacher for every 3 classrooms. Teachers now have 3 coordinating periods per week plus an additional 2 cluster planning periods per week.

TEACHER PLACEMENT AND TRANSFER

The cooperative efforts of the Office of Personnel, Region Eight Office, Office of Special Projects, and the Detroit Federation of Teachers produced the special criteria established for teacher placement in the NEC Project. The mutually established criteria directly relates to an expressed commitment to the goals and procedures of the project, and a commitment to those special aspects of teacher performance considered to be essential to successful teaching in the project. The placement of teachers in the NEC Project is subject to the approval of the principal of the receiving school.

The specialized skills and understandings established as prerequisites for the placement of a teacher in the NEC Project dictate that teachers would experience more exacting procedures to enter the project and would find it relatively easy to transfer out of the project. The right of a teacher to have a clear and uncomplicated access to transfer out of the project without prejudice is to be protected by all adminitrative personnel. Also, administrative personnel in the project are obligated to assess teacher performance in terms of compatibility with the essential performance expectations established for teachers.

The principal, who assesses a teacher's professional performance to be incompatible with one or more of the special aspects of expected teacher behavior judged to be critically essential to the success of the NEC Project, is obligated to inform the teacher in writing of his concerns and is required to establish a program to provide the teacher with appropriate forms of assistance. If within a reasonable period of time the teacher does not demonstrate a satisfactory improvement, the principal is required to initiate the transfer of the teacher. Teachers transferred from the NEC Project under such conditions are transferred without prejudice. Teachers have the option to request or to not request a review of the facts related to the principal's initiated transfer. A teacher who challenges a transfer from the NEC Project has his situation reviewed by the NEC Transfer Appeal Board. This Board is comprised of two NEC teachers, two NEC local school administrators, and the NEC Project administrator. The NEC Project administrator serves as the permanent chairman of the Board, and the decision of the Board is binding.

STAFF INVOLVEMENT

The quality and scope of the collective professional efforts of teachers directed to the refinement, advancement, and assessment of the critical conceptual and operational elements of the project will determine, in large measure, the degree to which the NEC Project will succeed in the realization of its goals. Teachers must individually and on a representative basis participate actively and effectively in appropriate structures to facilitate the maximizing of the critical contributions which can be made by teachers to the realization of the project's goals. The Project Director has the primary responsiblity to coordinate the establishment of such structures at the local school level and on a project wide basis. Local school administrators, working in conjunction with individual teachers, with an entire staff, and with delegated staff representatives, shall establish teacher involvement structures that are in keeping with the project's commitment to extensive staff involvement. Also, local school administrators have an obligation to respond to such structures in a manner that enhances their effectiveness.

STAFF COORDINATING COUNCIL

The official voice of the teachers and of the Detroit Federation of Teachers in the project is the Staff Coordinating Council. The Federation Building Representative, plus two other duly elected teachers, make up the three Council members from each school. The Staff Coordinating Council has determined the forced transfer policy which will be used if reduced funding causes a need to cut the teaching staff. The primary concern of the Council is the maintenance of communication between teachers and the administration.

IN-SERVICE EDUCATION

Providing teachers and administrators with relevant in-service educational experiences is fundamental to the success of the Project. Workshops and other forms of in-service education for teachers and administrators are scheduled during regular school hours, after regular school hours, on Saturdays, and during the summer months. In-service education activities are concentrated on the following topics: (1) school scheduling and the organization of clusters, (2) curricular development in the subject area, (3) cluster planning and coordination, (4) school-community relations, (5) behavioral learning theory and the individualization of instruction, and (6) development of an effective system for reporting pupil progress.

MATERIALS AND SUPPLIES

The regular Board of Education's effort to provide materials and supplies to NEC Project schools is being maintained, but it is relatively minimal in terms of the ideal conditions necessary to implement the educational practices dictated by the objectives of the Project. Title I & III funds are utilized to supplement the regular Board of Education allotment. Most of the materials and supplies ordered out of Title I & III funds are those being used to promote and reinforce the individualization of instruc-

tion. Special permission has been granted to the Project schools from the Division for the Improvement of Instruction to purchase and to utilize any kind of curricular materials deemed necessary and appropriate.

HOUSING

In order to provide enough classroom space to effect the reductions in class size called for in the NEC Project, housing in the form of transportable units has been added to the sites of three elementary schools. The Bell School has received 4 transportable units for a total of 8 additional classrooms and the Berry and Field Schools have each received 8 transportable units for a total of 16 additional classrooms at each of the two schools.

COMMUNITY INVOLVEMENT

Each NEC Project School has a duly elected representative body of parents and other community persons called Neighborhood Planning and Evaluation Councils. The Board of Education has authorized the direct involvement of such Councils in the following areas:

1. Participate in the redress of parent and community grievances involving the school.

2. Along with school personnel, evaluate and revise existing or proposed systems for reporting pupil progress.

3. Develop effective forms of communication between school and community.

4. Encourage and develop specific proposals for improvements in the educational process.

5. Review existing or proposed school policies, programs, and practices.

6. Serve as the consultative body in the assessment of and recommendations for any major building construction, repair, or remodeling.

7. Select the local school principal and assistant principals when a vacancy occurs.

CONTACT PERSONS

Dr. Norman V. Fuqua,
Region Eight Superintendent

Mrs. Carnie B. Greene,
Project Director

Region Eight Office
9141 E. Jefferson
Detroit, Michigan 48214

CHART OF THE ADMINISTRATIVE STRUCTURE OF THE NEC PROJECT

COORDINATION

ADMINISTRATION

DETROIT BOARD OF EDUCATION

SUPERINTENDENT
DR. NORMAN DRACHLER

DEPUTY SUPERINTENDENT FOR
THE ADMINISTRATION OF SCHOOLS
MISS JULIA McCARTHY

OFFICE OF FEDERAL, STATE,
AND SPECIAL PROGRAMS
DR. LOUIS D. MONACEL, ASST. SUPT.

PROGRAM DEVELOPMENT OFFICE
MR. HERSCHEL W. FORT

REGION EIGHT SUPERINTENDENT
DR. NORMAN V. FUQUA

NEC
PROJECT ADMINISTRATOR
MRS. CARNIE GREENE

DETROIT FEDERATION
OF TEACHERS
MRS. MARY ELLEN RIORDAN

ASSISTANT TO PROJECT
ADMINISTRATOR
MR. HERMAN KOSS

BELL ELEMENTARY SCHOOL
PRINCIPAL
MR. THERMAN SMITH

BERRY ELEMENTARY SCHOOL
PRINCIPAL
MR. RAY PRUETT

FIELD ELEMENTARY SCHOOL
PRINCIPAL
MISS HELEN MARTELLOCK

FIELD ANNEX ELEMENTARY
SCHOOL PRINCIPAL
MRS. HELEN ADAMS

PART TWO: GUIDE TO THE INDIVIDUALIZATION OF INSTRUCTION

SECTION I: METHODOLOGY

The Neighborhood Educational Center (NEC) is committed to the task of successfully establishing an effective systematic program of individualized instruction for the pupils enrolled in the four elementary schools which comprise the NEC Project. Individualization in the NEC Project is viewed as the process of identifying needed skills (diagnosis) and designing learning activities specifically for these needs (prescription). Individualized instruction is an approach to the teaching-learning process designed to provide more effectively for the range of individual differences to be found among pupils within a classroom.

Each pupil is expected to proceed at his own rate in the development of those skill areas in which he is diagnosed as deficient rather than to be expected to progress at a rate that has been established for all pupils. The individualization of instruction does not require that the grouping for instruction needs to be on a one-to-one basis, but a one-to-one relationship will at times be necessary.

The cluster concept for the organization of instruction advocated in the Project is so structured that a team of teachers share the responsibility for the identification of those skills which a pupil possesses, the steps that the pupil must take in order that he may acquire additional skills, and the identification and coordination of those instructional materials and experiences which will enable the pupil to make such steps successfully.

Although the immediate educational objective established for a number of pupils may be the same or quite similar, the approaches that pupils will use to reach the same or similar objectives are likely to be different. Thus, the team of teachers must not only provide the individual pupil with an example or model of the bahavior that he is required to perform, but they must provide the pupil with an approach that he can use to arrive successfully at behavior required in the objective. It should be clear to the pupil where he is going and how he is to get there. Upon the successful completion of a behavioral objective, the pupil will be able to perform an observable pattern of behavior. Periodic opportunities are then provided the pupil to practice that learned behavior. It is stressed that the pupil must always be working on appropriate objectives in ways most productive to him and with teacher assistance provided in the manner most relevant to his particular needs.

The essential components of the instructional rationale are the following:

1. Behavioral objectives: A behavioral objective is a statement describing the expected performance of the learner when he has completed successfully a learning experience and establishes the conditions under which the desired behavior is to be performed. A listing of behavioral objectives in math and language arts has been established as the basic instructional reference in these two areas. This listing of behavioral objectives represents an extensive coverage of the skills essential to successful achievement in reading and math.

2. Diagnostic: The diagnostic process is defined as the identification of the pupil's instructional needs. Diagnosis indicates the point at which instruction begins for a particular pupil in any given skill area. The diagnostic process functions to provide accurate information relevant to what skills a pupil has or has not attained at a given point in time.

3. Prescription: A prescription is the identification of the sequential steps of learning experiences proceeding from simple to complex and logically planned to achieve an objective.

4. Application: Application is the process through which the teacher manages the grouping of pupils for instruction and establishes instructional procedures and materials with regard for the individual needs of each pupil. The instruc-

tional procedures and materials utilized by the teacher must relate directly to the established behavioral objectives and to diagnostic information.

5. Assessment: Assessment is the process by which the individual pupil's level of mastery in the acquisition of skills stated in the behavioral objectives is determined. The process of assessment of the pupil is a continuous process. Assessment is made at the completion of a single behavioral objective and upon the completion of larger sets of related behavioral objectives.

SECTION II: APPLICATION OF METHODOLOGY

Management: Role of the teacher

The teacher working in an individualized instructional program must be able to adapt to the wide range of groups, interests, and abilities. The teacher, as he works with each pupil, must assume a number of roles. He must be a diagnostician, a materials specialist, a learning consultant, and one who assists pupils with personal-social needs.

Individualized instruction, in order to be effective, must be based upon diagnosis. Diagnosis implies assessment of needs in specific skill areas. To diagnose, or assess, several procedures are utilized. For a more complete description of these procedures, see Part IV, Section 1, entitled "Diagnosis".

As a DIAGNOSTICIAN, the teacher is involved in appraising the readiness a learner brings to a task. A consideration of readiness includes an investigation of prior learnings and any misconceptions a pupil might bring to a new learning situation. The teacher must, through diagnosis, determine the instructional level of each pupil as well as the level at which he can work independently without frustration. The teacher must identify the type of learner with whom he is working in order to determine if the pupil's style of learning is tactile, auditory, visual or kinesthetic. The teacher must identify the pupil's interests, the rate at which he works, his willingness to assume a new task and to stay with it. He must also assess: the pupil's ability to profit from self-evaluation, his tolerance of failure: and his own appraisal of himself as a learner and as a person.

Teachers in the NEC employ a technique which can be thought of as "test-teach-retest". In this technique teachers do the following: test for the placement of a pupil in a skill area, test for the diagnosis placement; and re-test the pupil to assess mastery. If mastery is not attained, teachers utilize the test again to identify points of weakness, and re-instruct. In this plan, a child is no longer required to repeat unnecessarily something which he has mastered, simply because the majority of the class is studying that unit.

There are many ways and means for making instruction more effective for both the pupil and the teacher. As a MATERIALS SPECIALIST, the teacher must be knowledgeable of the variety of the available instructional materials and equipment. The teacher must analyze these materials and select those which seem most appropriate for his pupils. When additional materials are needed and are not available, it is the teacher's responsibility to utilize other resources and/or to develop his own. A file should be compiled by teachers in each cluster to insure sharing of materials and ideas.

The teacher serves as a LEARNING CONSULTANT to his pupils by providing assistance and guidance in learning. As a result, the teacher finds he observes and listens more and talks less. The teacher individualizes a program for the instruction of each pupil's progress along a continuum of small and successful steps.

Implementation

The classroom is a learning laboratory. There will be much movement, handling of materials and communication. The teacher with his pupils must establish some general procedures to avoid unnecessary movement which hampers the learning atmosphere. The teacher who is launching such a program must assume a number of responsibilities, such as:

1. Providing books
2. Providing related seatwork
3. Making arrangements for equipment, space, scheduling
4. Keeping records
5. Guiding pupil's selection and utilization of materials
6. Forming groups and selecting helpers for each
7. Giving clear and precise directions to the learners

The teacher as the manager and director should have her outline for each day's program established. The suggested procedures are as follows:

1. Obtain all necessary materials and review with the helpers for the day. All general announcements should be made before pupils begin their activities.
2. Provide the type of assignment or task that will maintain the interest of the pupils and furnish them with materials that will aid in the improvement of the basic skills.
3. Provide time allotments for each group, arrange the room to facilitate the program physically, and assure direct communication with a reasonable number of groups. Each pupil should receive some personal attention from the teacher during every day.
4. Provide each pupil with the opportunity to plan some part of his school day.
5. Keep records and evaluate progress. Current records must be kept by pupils and teachers of the learners' strengths and weaknesses so that teachers can readily prescribe learning tasks to correct, maintain and reinforce skills.

Grouping

Grouping is defined as the placement of one or more pupils in an effective learning situation. Effective grouping in the NEC Project provides for the wide spread of abilities and interests existing among children in the cluster. The grouping process emphasizes the similarities among children, but makes adjustment for their differences. The learner should be able to progress at the rate which is most comfortable for him. Effective grouping should be directed toward these objectives:

1. Foster desirable attitudes and habits.
2. Provide for the individual needs of each pupil.
3. Promote facility and independence in basic skills and study habits.
4. Provide each child with appropriate materials.
5. Give each child maximum opportunity to master the skills needed for each succeeding task that he will face.
6. Promote the feeling of success and accomplishment for each individual.
7. Provide opportunities for each individual to use a skill once he has mastered it.

Purpose of Grouping

The primary purpose of grouping is to provide for the learner's individual needs in the most appropriate setting, based on interests, aptitudes, previous experiences and pre-requisite skills. It is most important to choose classroom activities that encourage individualization and that also promote self-discipline. The learner proceeds with his task hampered, but supported by the individuality of other pupils. Grouping enhances teaching-learning effectiveness by providing flexibility needed to marshal all available resources for effective learning.

Grouping in the Cluster

In every cluster there is a wide range of abilities among pupils. Because one teacher cannot direct all of each pupil's activities, it is necessary to group children to make it practical for the teacher to efficiently and effectively help each learner to make significant progress. Appropriate grouping permits

the learner to work at his actual level of accomplishment in any subject matter area, and permits him to advance as he masters the pre-requisites and/or co-requisite. This means the grouping must be FLEXIBLE. Grouping is based on diagnostic information, pupils' interests, self-selection of materials, individual profiles, and attitudinal differences.

Types of Grouping

Effective teaching requires use of a variety of grouping techniques. Several types of groups are:

Achievement group
Special needs group
Team group
Tutorial group
Interest group
Research group

ACHIEVEMENT GROUP: This refers to grouping for the purpose of working toward the mastery of the basic skills or objectives of the individualized program. Such groups are formulated based on diagnostic information; pupils diagnosed as needing work on a similar skill are grouped together for that purpose. The nature of the inter-action in achievement groups will be primarily instructional or teacher-pupil. Learning activities and experiences will be for the most part teacher directed. For this reason, groups of this type should not be any larger than the teacher can effectively direct at one time (usually not more than 8).

SPECIAL NEEDS GROUP: Special needs grouping is for those learners whose needs are different from the other children in a larger group. The size of the special needs group can vary from one to a larger number, although the group size should not be of larger than approximatey 9-10. This group should be of a size that permits the teacher to observe and to help the individuals within the group. The size should be such that peer-peer learning can be managed with ease.

The purposes of the special needs group are to provide accelerated or remedial help: learners working on concepts, skills, or activities all needing similar experience. For example, if most of the children in a Primary I group recognize the letters of the alphabet, but 5-6 do not, they can form a special needs group with activities designed to further help them gain this skill. Or if a group of 3-4 learners have quickly gained the concept of long vowel discrimination, they could form a special needs group that can do related activities dependent upon this skill, while the teacher has the balance of the larger group (which forms a special needs group) doing more teacher directed activities in developing the initial discriminatory skill. The special needs group is set up on the basis of diagnosis of pupil need and constant evaluation of progress. The nature of instruction is teacher-pupil, peer-peer, adult or independent.

TEAM GROUP: Team grouping is two or more classrooms of a cluster combined for a presentation. All activity is geared toward some one or more specific objective(s). The objective(s) may be pursued individually with small groups of classmates, or with teachers – depending on the requirements of *each* objective.

TUTORIAL GROUPS: Tutorial groups are groups formed for direct instruction provided by either the teacher, paraprofessional, or a more advanced pupil. Groups can vary in size from one-to-one (1 child learner and 1 adult or 1 child learner and 1 peer) or to a small group with 1 peer or 1 adult. The maximum suggested number for a tutorial group is 3. The purpose for this type of grouping is for drill practice, and planning activities for small groups.

Some methods for forming a tutorial group are:

1. Based on skill need, a child who has acquired the skill may be able to tutor another child.
2. A child who has difficulty operating in a group situation can be placed in a tutorial setting.

The nature of the interaction is direct instruction or review by an adult or pupil in an isolated situation.

INTEREST GROUP: Pupils not necessarily on the same ability level who have joint interest in a particular topic or subject area, work together and utilize the knowledge they have gained from singular and collective efforts. Although the individuals in this group have differences, they will initiate, discard and/or modify all behavior to form a systematic group achievement objective. As the purpose and focus of each task level changes, the skills of the learner(s) will necessitate a change in the group size. They will work in an environment conducive to individual progress without reference to precise standards or norms. This experience will lead to the group experience where at least two (2) or more work together on a specific skill or task.

RESEARCH GROUP: A research group may be composed of one or more pupils investigating a specific question or topic. Various avenues of pursuit may be: experimental techniques and problem solving. After specific information has been obtained, the pupil will report his findings. The size of the research group will vary according to the interest shown in a specific topic being investigated. The purpose or use of this type of learning process helps to develop interest, individuality, group sharing and a deeper understanding of the subject matter, along with promoting the feeling of success and accomplishment for each individual. The research group is formed on the basis of achievement level and interest in special areas, rather than on classification by IQ or standardized test. This type of group learning capitalizes on the learner's special interests and unique experiences.

Room Arrangements

As a general rule, it should be understood that a classroom pattern is justifiable if:

1. The teacher can effectively manage it.
2. The children are so arranged that they are all pursuing activities appropriate for them.
3. Appropriate safety factors are taken into consideration.

Conceivably the room arrangement can vary along a continuum from all individuals pursuing different objectives to all individuals grouped together pursuing the same objective. Again, the important question is not how, but why; the grouping arrangement must reflect a teacher's ability to manage the pupils' ability to manage themselves, and the individual needs of the children.

Selection of Instructional Materials

A wide range of instructional materials appropriate for use in the NEC Project is necessary for a program of individualized instruction. Materials must meet the following criteria:

1. Are harmonious with the behavioral objectives.
2. Have realistic representation of all ethnic groups.
3. Have excellent visual quality in terms of color, print, design and interest appeal.
4. Must be durable.
5. Clear and complete directions are provided.
6. Presented in an interesting way and in a logical sequence giving attention to a broad scope of activities.
7. Exercises that are diagnostic for pupil's strenths and weaknesses.
8. Can be used in a variety of ways and for more than one or two tasks.
9. Suitable practice materials are offered.
10. Exercises that are easily corrected.

The teacher should select multi-level sets of textbooks to cope with individual differences. A good supply of supplementary materials should be carefully chosen for each pupil.

The media center is the best source in the local school for the selection of individualized materials. A trained librarian is available in each media center to help with the selection. In the media center, a teacher will find a full line of audio-visual equipment, software and hardware. A file relating materials to behavioral objectives is available to the teacher.

Lesson Plans

In the NEC Project, a lesson plan is an organized scheme in the instructional process written in clear and understandable language listing materials and methods.

A lesson plan must correspond to the steps of the learning sequence in a Prescription. The instructional steps of the lesson plan should clearly state what the teacher does and what the learner's response is expected to be. The instructional steps necessary to accomplish each step should be included. In this plan the instructional materials should be listed and an evaluation made of the performance of the teacher as well as that of the learner.

It should be understood that any written format for lesson plans is acceptable as long as the above criteria are met.

Following are two examples of a lesson plan format.

SUGGESTED LESSON PLAN

School _____ Category _____

Cluster _____ Behavioral Objective _____

Teacher(s) _____ Date _____

_____ Level of Content _____

_____ Primary – Intermediate – Advanced

Materials: _____

_____

_____

_____

Instructional Sequence:

Evaluation: See Reverse Side.

Recommendations: See Reverse Side.

SUGGESTED LESSON PLAN

Evaluation:

Teacher's evaluation of instructional steps.

Teacher's evaluation of his/her own Performance.

Learner's Achievement.
(e.g. Mary and Joe have accomplished steps 1 and 2.
Henry did not move from step 1.)

Recommendations:

(e.g. Change model for Henry. Use overhead projector.)

SUGGESTED LESSON PLAN

TIME BLOCK: _____ NEC OBJECTIVE _____

CATEGORY: _____ PRESCRIPTION _____ _____

LESSON: _____ _____

ROOM: _____ CLUSTER: _____ SEC: _____ Evaluation: (see other side) _____

Level/Group	Specific Objective . . .	Prescription (Teaching Plan) . . .	Materials

Recording and Evaluation

In the area of individualized instruction record keeping is a tedious but important task. The pupil's progress is based on the teacher's knowledge of the individual's needs. Therefore, accurate, up to date records must be kept. This information enables the teacher to establish realistic goals for each pupil. In addition to the standard records kept by teachers in the Detroit system, the N.E.C. Project requires that certain additional records be kept.

Please refer to diagnostic list.

PART THREE: LANGUAGE AND MATH OBJECTIVES

A major share of the responsibility for preparing students to become contributing members of society rests with the schools. The quality of education received in elementary schools contributes greatly to success in the world of work and enjoyment of leisure time. Urban schools today must accept accountability for providing quality education for all children.

Since a large segment of children in the school attendance areas of Bell, Berry, Field and Field Annex had consistently lagged in general achievement with gross deficits in language arts and math, committees of teachers and administrators constructed behavioral objectives for these two critical curricular areas. A listing of behavioral objectives in math and language arts has been established as the basic instructional reference in these two areas. This listing of behavioral objectives represents coverage of the skills essential to successful achievement in reading and math.

The following four terms are important to an understanding of NEC procedures:

Behavioral Objective . . a statement describing the expected performance of the learner when he has successfully completed a learning experience. Establishes the conditions under which the desired behavior is to be performed.

Sequential . . . . . refers to the ordering of learning experiences starting from the simple and progressing to the more complex.

Prerequisite . . . . . a subordinate objective or skill that must be achieved before a subsequent sequential learning experience can be accomplished.

Corequisite . . . . . a skill that should be achieved concurrently with other skills as part of a learning sequence.

All of the behavioral objectives in language arts and math satisfy the following four criteria for behaviorally stated objectives:

1. Always specify the learner. (Who is performing the task?)

2. Always specify the learner's behavior as an observable performance, (verbal or non-verbal) or in terms of a product. (What exactly will the learner say, do, or make?)

3. Always describe the conditions of learning. (What will the learner be given in order to do the task? What resources, aids or cues will he have to help him at the moment of his performance?)

4. Always specify the minimum standard of performance. (What percentage of answers must be correct or what dimensions must a product have?)

Each of the four criteria must be stated in terms of specifics, not in generalities. The more specifically a task is defined, the easier it is for the objective to be sequentially organized and for the steps leading to the attainment of an objective to be sequentially planned. The more specifically a task is defined, the easier it is for the learner and observer to evaluate the performance. An objective may be a pre- or co-requisite skill for another learning sequence or set of behaviors; therefore, objectives may be sequenced vertically or horizontally. It is necessary that objectives be appropriate to the needs of the learner and that high level mastery be obtained. Unless a minimum standard is otherwise stated in the objective, it is expected that the learner will accomplish each objective with 90% accuracy.

SECTION I: LANGUAGE ARTS BEHAVIORAL OBJECTIVES

The Language Arts Behavioral Objectives section represents a comprehensive coverage of the language arts skills. These objectives are basic to the development of oral and written language as well as to all those related skills included in the reading act. Any learner who successfully achieves the objectives in this section will be a proficient reader and will have mastered language skills to such a degree that he can attain success in the world of work and society in general.

A classification system has been developed to help teachers use the completed document more effectively. The first segment, designated as oral and written language, includes those objectives related to language growth. The development of these objectives should be simultaneous with the instruction of the objectives in the other skills areas. The second segment dealing with decoding, comprehension, language usage and work-study skills gradually increases in complexity. Children in Kindergarten and Primary Unit are expected to begin with lower sequences of a category and advance throughout the grades toward mastery of each category. The same objective may be taught at various grade levels. Teachers are responsible for maintaining skills at progressive levels with increasingly complex content. For example, if a child has learned synonyms and antonyms in the third grade, the fifth grade teacher is responsible for increasing vocabulary, emphasizing those two skills.

When the learner is unable to perform an objective, a prescription is necessary. A prescription is a series of sequential steps of learning experiences logically planned to achieve an objective.

Categorization of Language Objectives

Code		No. of Objectives
	SOCIAL LANGUAGE SKILLS	
01	Oral Language	22
02	Written Language	15
	Decoding 03 - 05	
03	Auditory and Visual Perception	22
04	Phonetic Analysis	47
05	Structural Analysis	31
06	Comprehension	35
07	Language Usage	44
	WORK STUDY SKILLS	
08	Dictionary	34
09	Globes and Maps	18
10	Graphs	13
11	Table of Contents and Index	7
12	Card Catalog	5
13	Encyclopedia	4
14	Other Resource Materials	10
15	Use of Reference Materials	7
16	Use of Other Media	7
	Dolch Basic Word List	

SOCIAL LANGUAGE OBJECTIVES

Mastery of these objectives accelerates language development and enables the learner to function in the social environment of the classroom. Children are expected to have proficiency in these skills by the end of early Primary. However, learners at all levels who have not mastered these skills will continue to work on them concurrently with objectives of other categories.

a. In answer to the question, "What is your name?" the learner will say both his first and last names.

b. From memory, the learner will say all the letters in his name in correct sequence.

c. According to teacher direction and without a model, the learner will write both his first and last names.

d. In answer to the question, "What is your address?" or "Where do you live?" the learner will say his house number in the correct sequence and his street name.

e. In response to the question, "What is your address?" or "Where do you live?" the learner will write his correct address.

f. In answer to the question, "What is your telephone number?" the learner will say his telephone number in the correct sequence.

g. In response to the question, "What is your telephone number?" the learner will write his phone number.

h. When asked, the learner will tell both the first and last names of his parent(s) or guardian(s).

i. The learner will tell or write his birthdate.

j. When asked his teachers' names, the learner will say his teachers' names, using their correct titles, Mr., Mrs. or Miss.

k. The learner will write at least one teacher's name using the proper title and correct spelling.

l. When asked "What is his (her) name?" or told to call his classmates for any activity, the learner will call each of his classmates by first name only.

m. Given a set of printed names of classmates and teachers, the learner will select and say at least one name of a classmate, select and say his own name, select and say his teacher's name.

n. When asked the name of an administrator or an office staff member, the learner will say the name correctly.

o. When given a verbal message by one person, the learner will repeat it to another without error.

p. When asked, the learner will name all seven days of the week in correct order beginning with Sunday.

q. When asked to name the months, the learner will begin with January and name all of the months in proper sequence through December.

01: ORAL LANGUAGE

1. Given the twenty-six letters of the alphabet, in oral or written form, the learner will say all of the letters in proper sequence.

2. Given a letter of the alphabet, the learner will say the letters which precede and follow it.

3. Given fifteen pictures, objects, or models and a list of categories, the learner will say the names of at least fourteen pictures and classify them into proper categories.

4. Given twenty familiar pictures, objects or models, the learner will tell the function of at least eighteen.

5. Given 10 pairs of objects which are similar in function, e.g., fork, spoon, the learner will tell the common and uncommon properties of each pair.

6. Given a title, beginning line or the name of a character, e.g., *Little Bo Peep,* the learner will say or sing the nursery rhyme, poem or song in proper sequence.

7. Given an oral story, nursery rhyme or poem, the learner will describe or talk about at least 3 events or actions using the vocabulary of the rhyme, poem or story.

8. The learner will draw a picture and dictate to a secretary (teacher, aide or helping child) a caption (title) for his drawing about a given topic.

9. Given an oral story of an imaginative or familiar experience, the learner will dramatize the event or action so that half his classmates can identify the character, act, event or story.

10. In answer to who, when, what, why and how questions, the learner will answer in complete sentences each of the five kinds of questions.

11. Given the title of a story, a main event or the name(s) of the character(s), the learner will tell the complete story in sequence.

12. Given an oral story, nursery-rhyme, poem or illustration, the learner will tell at least 3 facts about characters (how they looked or felt about specific acts).

13. Given an incomplete story or incomplete pictorial representation of a story, the learner will complete the story orally in no less than three complete sentences.

14. Given five spoken words, the learner will tell the meaning or give examples of each of the five words.

15. Given a recorded or dictated list of six word groups, half of which are complete sentences, the learner will repeat those which are complete sentences and complete orally those which are incomplete.

16. Given a set of any number pictures from two to seven, the learner will sequence all the pictures and dictate or tell a story using at least the same number of sentences as there are pictures in the set.

17. Given a topic, play or current event, the learner will report to the class noting at least three events or ideas, using proper sequence and complete sentences.

18. Given a story beginning, the learner will tell in at least three complete sentences what probably happened in such a way that the relationship between the beginning and end is logical.

19. Given a story ending, the learner will tell in at least three complete sentences what probably happened before in such a way that the relationship between the beginning and ending is logical.

20. From personal experience or experiences provided through audio-visual representations, the learner will tell a story in which he uses a sum of at least four similes, (jump like a rabbit) or metaphors (the ship plows the seas) or a combination of both.

21. The learner will transmit, record or deliver orally before an audience his own three-minute radio script about a specific topic.

22. Given a familiar topic, the learner will deliver a three minute impromptu speech.

02: WRITTEN LANGUAGE

1. Given a model, the learner will write the upper and lower case letters of the alphabet in sequence.

2. Given a letter of the alphabet, the learner will write the letters which precede and follow it.

3. Given a color sample and a model of its name, the learner will write the name of the color.

4. Given worksheets divided into 8 squares with one color in each square and a line for writing the color name, the learner will write in the appropriate color name for each color.

5. Given a topic (i.e. something which makes me sad), the learner will draw a picture and write a caption for his picture.

6. From an experience story the learner will copy a sentence or sentences using correct letter forms, punctuation and capitalization.

7. Given a topic (i.e. something which makes me happy), the learner will draw a picture and write a sentence about it.

8. Given a topic, the learner will write a story of at least three complete sentences.

9. Given an oral story, nursery rhyme, poem or illustration and a written list of 15 descriptive phrases, 10 of which apply to the oral narrative, the learner will select and write at least nine phrases which apply.

10. In answer to who, when, what, where, why, and how questions, the learner will write the answers for each in complete sentences.

11. Given a list of 12 words taken from his own story or taken from an audio-visual presentation, the learner will write a simile (jump like a rabbit) or metaphor (the ship plows the sea) for each.

12. Given a written direction of at least three separate commands, the learner will follow the direction in the proper sequence and write a similar set of directions for someone else.

13. Given a story beginning, the learner will write the probable ending in such a way that the relationship between the beginning and ending is logical.

14. Given a story ending, the learner will write a probable beginning in such a way that the relationship between the beginning and the ending is logical.

15. Given a familiar topic, the learner will write a 100-word impromptu composition.

DECODING: 03 - 05

Decoding includes all those analytical skills which the learner uses to attack unknown words and phrases which he encounters in written language. No separate category has been used for Encoding which uses the same skills as those in Decoding but refers to the learner's writing performance rather than "reading" performance.

The Decoding section has been organized into three main areas – Auditory and Visual Perception, Phonetic Analysis, and Structural Analysis. Included in the Auditory and Visual Perception section are five behavioral objectives directly related to the Dolch Word List. The Phonetic Analysis section has been categorized for easy skill identification.

When teaching an objective the auditory, visual, phonetic, and structural elements should be developed simultaneously. All of these skills must be maintained at each successive level.

03: AUDITORY AND VISUAL PERCEPTION

1. Given recordings of 25 sounds (telephone ringing, water running, etc.) on tape, or audio-flash cards, the learner will record the names of at least 20 sounds.

2. Given 5 sets of words, 3 in a set, 2 of which rhyme, the learner will state orally the 2 words which have the same rhyming elements.

3. Given 5 objects and pictures which are similar but have differences as well, the learner will state 2 likenesses and differences for each pair of objects.

4. Given 15 objects, or pictures of objects, of various sizes and shapes, the learner will name the shape of each object as being a circle, square or triangle and will further identify it by saying that it is larger or smaller than a similar object.

5. Given 10 geometric shapes: circles, triangles and squares, the learner will reproduce at least a total of 9 shapes, in such a way that the triangles have 3 lines which meet in angles, the squares have 4 lines which meet in angles and the circles have a regular shape, not elliptical and not free form.

6. Given the following color cards: red, blue, yellow, green, purple, orange, brown, black and white, the learner will name each color when shown or show each color when named.

7. Given 18 objects or pictures of objects, depicting the colors red, blue, green, yellow, orange, purple, brown, black and white, the learner will select the 2 objects for each color and name the color.

8. Given a set of colors and a set of color names, i.e., red, blue, yellow, green, black, purple, brown, white, and orange, the learner will match each color with its color name.

9. Given a set of 5 pictures, the learner will correctly select all 5 pictures from sentence clues given by others.

10. Given 10 objects or drawings of objects and the word symbols for the objects, the learner will match each object with its correct name and tell what makes each shape different from the others.

11. Given 5 sets of 5 words, only 3 of which have the same beginning letter, the learner will group those three words in each set.

12. Given all of the letters of the alphabet, in lower case and capital letter forms, the learner will match the letters and name them.

13. Given 2 lists of words, one consisting of words beginning with the lower case letters and one consisting of the same words beginning with capital letters, the learner will match the words by drawing lines to connect the 2 similar words.

14. Given the 26 letters of the alphabet the learner will name each of the letters in consecutive order, and will also name or circle the letters of the alphabet when they are pointed to out of sequence.

15. Given an experience chart story which the learner has shared in writing, the learner will identify words, phrases and sentences asked for, by naming and pointing to the correct word or phrase.

16. Given material with 10 words in 3 columns, each group with similar letter content but different sequences (saw, was, war) the learner will, responding to dictated direction, circle each word read by the caller.

17. Given 12 words with more than 10 letters, 6 correctly spelled and 6 incorrectly spelled, the learner will select only the correctly spelled words.

18. Given the 40 Pre-Primer Words of the Dolch Basic Word List, the learner will say each word and use it in a sentence orally.

19. Given the 52 Primer Words of the Dolch Basic Word List, the learner will say each word and use it in a sentence orally.

20. Given the 41 Level 1 Words of the Dolch Basic Word List, the learner will say each word and read the word in a sentence when written on the board.

21. Given the 46 Level 2 Words of the Dolch Basic Word List, the learner will say each word and read the word in a sentence when written on the board.

22. Given the 41 Level 3 Words of the Dolch Basic Word List, the learner will say each word and use it in an original sentence.

04: PHONETIC ANALYSIS

Initial, Medial, and Final Consonant Sounds

1. Given 8 words, 5 of which have the same beginning consonant sound, the learner will name the 5 words which have the same beginning consonant sound.

2. Given 10 words orally, 1 word at a time, the learner will say 3 words which have the same ending sound as the spoken word.

3. Given 8 two syllable words, 5 of which have the same medial consonant sound, the learner will name the 5 words which have the same medial consonant sound.

4. Given a dictated list of 28 words and a sheet numbered from 1 to 28 (with 3 letters for each number), the learner will circle the letter which is the initial consonant for each word dictated, getting at least 25 correct. Repeat for final and medial sounds.

5 Given 25 new words having known initial, medial and/or final letter sounds, the learner will pronounce at least 23 of the words correctly.

6. Given 5 sets of 3 words containing the same consonant in the initial, medial, and final positions, the learner will name the consonant and will say three additional words with the consonant in the three positions.

7. Given a mixed list of 20 words containing the hard and soft "c" sounds (hard-cat; soft-city), the learner will say and then write 2 lists — one containing the soft "c" words and one containing the hard "c" words, using all 20 words with no more than 2 errors.

8. Given a mixed list of 20 words containing the hard and soft "g" sounds (hard-gum; soft-gypsy), the learner will say and then write 2 lists — one containing the soft "g" words and one containing the hard "g" words, using all 20 words with no more than 2 errors.

9. Given a mixed list of 20 words containing the variant spellings of the "k" sound (keep, carry, rock, Christmas), the learner will underline the part of each word that stands for the "k" sound, using all 20 words with no more than 2 errors.

10. Repeat objective #9 for the "f" sound as in *fan, off, elephant, laugh.*

11. Repeat objective #9 for the "h" sound as in *house, whole.*

12. Repeat objective #9 for the "j" sound as in *join, gentle, huge, wedge.*

13. Repeat objective #9 for the "s" sound as in *same, circle, science, else, twice.*

14. Repeat objective #9 for the "z" sound as in *zoo, buzz, does, please.*

15. Given a list of words with irregular spelling patterns for the sounds "sh" as in sugar, machine, motion, and ocean, the learner will pronounce the words and underline the parts of the words that represent these sounds with 90% accuracy.

16. Given a list of words with irregular spelling patterns for the sounds "ch" as in picture, denture, and natural, the learner will pronounce the words and underline the parts of the words that represent these sounds with 90% accuracy.

17. From a list of 15 words (ghost, comb, write, knife, sword, two, night, etc.) with a consonant letter(s) that is not represented by a sound when the word is pronounced, the learner will "X-out" all the silent consonants (e.g. comb, write, night).

Consonant Blends

18. Given 4 words beginning with the "bl" consonant blend, the learner will pronounce, write, or illustrate the 4 words. The learner will do the following consonant blends in the same manner: br, cl, cr, dw, dr, fl, fr, gl, gr, pl, pr, sc, sk, sl, sm, sn, sp, sw, tr, tw.

19. Given a key with examples of three cluster consonant blends (e.g. spr, str, scr, sch, spl) and dictated list of 20 words using these blends and known phonograms (e.g. eet, ing, am, ask), the learner will write at least 18 of the 20 correctly.

20. Given 20 words all containing final consonant blends: ct, sp, rm, lf, mp, pt, rk, rl, rn, lp, nt, nd, ng, and ts, the learner will say the words and underline the 2 letters that represent the final sound.

21. Given 10 words containing two and three letter initial consonant blends, the learner will identify the blend by naming the blend letters in each of the 10 words.

22. Given 10 words containing two and three letter medial and final consonant blends, the learner will identify the blend by naming the blend letters in each of the 10 words.

23. From dictation of 25 words with two and three letter consonant blends in initial, medial, or final position, the learner will write each of the 25 blends.

24. Given the phonogram "ake" and a chart of the initial consonants and another chart of consonant blends, the learner will say and write at least 5 rhyming words by writing a consonant or consonant blend before the phonogram "ake" to form a word (e.g. fake, flake). The learner will follow the same procedure for these phonograms: ay, an, at, any, all, eep, en, et, ight, ill, ing, ick, old, ot, oll, op, ung, unk, ush, ust, etc. . . .

Consonant Digraphs

25. Given 8 words, each of which either begins or ends with the consonant digraphs, sh, ch, th, or wh, the learner will name the digraph and will say additional words which contain the same digraph in the initial or final positions with 100% accuracy.

26. Given a list of 9 digraphs (ng, sh, ph, gh, ck, ch, wh, th, nk), the learner will write at least 3 words for each of the consonant digraphs.

27. From a dictated list of 15 words containing consonant digraphs, the learner will write the digraph heard in each word.

28. Given a list of 20 words containing the voiced and unvoiced "th" sounds (voiced-the; unvoiced-thimble), the learner will pronounce, then write two lists — one containing the voiced "th" words and one containing the unvoiced "th" words with no more than 2 errors.

29. Given a list of 20 words containing the 2 variant "ch" sounds (choir-chair), the learner will pronounce, then write 2 lists — one containing the "ch" words as in choir, the other containing "ch" words as in chair, with no more than two errors.

Vowels

30. Given 10 words with the short "a" sound (cat, man, pack), the learner will say each word and circle the short "a" in each word. The learner will follow the same procedure for the short vowel sounds of e, i, o, and u.

31. Given 15 one syllable words, 3 for each short vowel sound, the learner will pronounce each word with the correct short vowel sound.

32. Given 10 words, dictated one at a time, with the long "a" sound (main, say, name), the learner will say each word and two additional words with that sound. Repeat for long vowel sounds, e, i, o, and u.

33. Given a list of 16 one syllable words containing short and long vowel sounds, the learner will correctly say and separate them into the two categories, short and long.

34. Given ten words with vowel sounds in the initial, medial or final positions, the learner will pronounce three additional words for each word given with the vowel in the same position.

35. Given a worksheet with a code for differentiating the three sounds of "y" and 35 words all containing the letter "y" standing for the three different vowel sounds: short i (mystery), long i (dry) and long e (candy), the learner will, using the code, mark the letter "y" to show the sound heard in each word.

Vowel Digraphs and Diphthongs

36. Given a list of 20 words with vowel digraphs (e.g. maid, say, seam, boat, seed, etc.) the learner will say and then underline the part of each word containing the vowel digraph.

37. Given a list of 20 words with irregular vowel digraphs (e.g. great, chief, head, and rein), the learner will underline the part of each word containing the irregular vowel digraph.

38. Given a list of 25 words containing vowel digraphs and a numbered key for pronunciation of each (e.g. labeled picture 1. beet, 2. train, 3. road, etc.), the learner will say, then number the words corresponding to the key pronunciation, getting at least 23 correct.

39. Given 16 words containing diphthongs, the learner will say and then circle the letters that make the sound of diphthong, getting 100% accuracy.

40. Given 10 words, containing vowel digraphs and diphthongs, the learner will say two additional words containing the same sound for each.

41. Given 10 words, one at a time, containing murmur diphthongs (er, ir, ur, or as in her, bird, work, fur), the learner will give two additional words for each.

42. Given a numbered phonetic key and a dictated list of 15 words (e.g. cow, snow, boy, oil, saw), the learner will write the number from the phonetic key for the sound heard in each word.

43. From a dictated list of 20 words containing diphthongs or vowel digraphs, the learner will write the diphthong or digraph for each dictated word.

Syllables

44. The learner will identify the number of syllables in 10 words given him by saying the number of vowel sounds heard in each of the words.

45. Given a review list of ten two-syllable words, the learner will pronounce each and tell what part of the word is accented with 100% accuracy.

46. Given a list of 20 words, ten of which have accents on the first syllable, ten with accented second syllables, the learner will say each word and write it in the column indicated by the numbers 1 or 2, denoting placement of accent.

47. Given a list of unfamiliar words of 3, 4, and 5 syllables, some of which have been extended by the addition of prefixes and suffixes, the learner will say each word and sound out the syllables.

65: STRUCTURAL ANALYSIS

1. Given a list of words with vowel digraphs (e.g. ai, ay, ee, oa, ae), the learner will underline the part of each word containing the vowel digraph. Co-req. P.A. #35.

2. Given a list of words containing diphthongs, the learner will underline the letters that are blended together to make the diphthong. Co-req. P.A. #39.

3. Given a list of words containing diphthongs or digraphs, the learner will write the words under the appropriate headings.

4. Given a list of known nouns whose plurals are formed by adding *s*, the learner will copy each word and write its plural.

5. Given a list of words ending in *s, x, sh,* or *ch,* the learner will write the plural using the rule for adding *es.*

6. Given a list of words ending in *y*, the learner will write the plural for each using the rule for changing y to i and adding es.

7. Given a list of words ending in *f* or *fe*, the learner will write the plural using the rule to change *f* or *fe* to *v* and add *es*.

8. Given a list of singular nouns with other irregular plurals the learner will write correctly the plural form. (e.g. man-men, sheep-sheep)

9. Given ten words, both singulars and plurals, (including those plurals used in objectives #4 - #7), the learner will write the possessive forms for at least nine words using the apostrophe in the correct place and adding *s* when needed.

10. Given a list of 25 *compound words,* the learner will separate at least 23 words correctly.

11. Given a list of 15 *contractions*, (e.g. it's, we've, we'll, doesn't, don't), the learner will pronounce and write each of them in a sentence.

12. Given a list of 15 *contractions,* the learner will write the unshortened form for all 15 words, or when given a list of 15 of the two words used in a contraction the learner will write the 15 contractions.

13. Given 20 words using the apostrophe to denote *possession* or *contraction,* the learner will list the words into the two categories.

14. Given a list of known words with two or more syllables the learner will use the diacritical mark to divide each word into syllables and write: the number of vowels seen, the number of vowels heard, and the number of syllables in the word.

Example:

Word	Vowels seen	Vowels Heard	No. of Syllables
window	*i o* (2)	*i o* (2)	win / dow (2)

15. Given a list of 25 words whose first vowel sound is followed by double consonants (e.g. bet/ter), the learner will use the diacritical mark to divide each word into syllables.

16. Given a list of 25 words whose first vowel sound is long and is followed by a consonant (e.g. la/bor), the learner will use the diacritical mark to divide each word into syllables.

17. Given a list of 25 words whose last syllable ends in *le*, which is preceded by a consonant (e.g. ta/ble), the learner will use the diacritical mark to divide each word into syllables.

18. Given a list of 25 words whose last syllable begins with a blend (e.g. hun/gry, win/try), the learner will use the diacritical mark to divide each word into syllables.

19. Given a list of words whose first syllable ends in a consonant preceded by a short vowel (e.g. grav/el, pow/er), the learner will use the diacritical mark to divide each word into syllables.

20 Given a list of two-syllable words in which one of the two syllables contains a consonant digraph, the learner will separate each word correctly (e.g. fa ther).

21. Given a list of 20 words, some of which require doubling the final consonant, and others requiring no structural change, the learner will add the endings *ed, ing, er* and *est* to at least 18 of the words.

22. Given 25 known verbs, the learner will add the suffixes *ed* and *ing* and make the structural changes necessary for adding the suffix when no change is required, when dropping the final *e*, or changing *y* to *i*.

23. Given a list of 20 known words, the learner will write the comparative or superlative form for each (er-est).

24. Given a list of 20 known verbs, the learner will write the related nouns by adding *er* or *or* and use the nouns in sentences:

Examples:	*play*	*player*	A player is one who plays.
	sail	*sailor*	A sailor is one who sails.

25. Given a list of 25 words, the learner will write at least 23 new words by adding the suffixes *y* or *ly* to form adjectives such as rainy, or adverbs such as motherly, and when necessary will make the change of *y* to *i* as in happily.

26. Given 30 prefixes and suffixes, the learner will tell or write the meaning of each affix as instructed. See glossary for affixes.

27. Given a list of 15 or more words with learned affixes added, the learner will write the correct base or root word beside these words.

28. Given a list of 25 sentences in which words with new prefixes and suffixes have been added to learned root words, the learner will write the meaning of the word as it is used in the sentence.

29. Given 30 known words to which known affixes have been added, the learner will write the meaning of the words.

30. Given a list of 10 known root words and 20 known affixes, the learner will make affixed words and use them in sentences.

31. Given 20 root words whose meaning is known, the learner will make a new word by adding 2 known affixes at the same time to each root word and use the new word in a sentence. e.g. *in*direct*ly*, *un*believ*able*, styl ish ly, force ful ly.

06: COMPREHENSION

Comprehension has not been sub-divided but includes all those skills of bringing meaning to or getting meaning from written language such as:

A. Classification
B. Telling details and main ideas
C. Drawing inferences and conclusions
D. Telling the author's purpose
E. Telling the purpose of a story
F. Telling how the characters feel
G. Describing the emotional content of a story
H. Summarizing

1. Given a set of pictures of twelve household articles and furniture, the learner will place all the articles in boxes labeled according to the room in which they are used (e.g. sofa-living room; refrigerator-kitchen).

2. Given a set of ten labeled pictures of a variety of structures, the learner will properly place each picture into boxes labeled home, work, or recreation.

3. Given a set of twelve labeled pictures of tools, utensils, and implements, the learner will place each picture in a pocket chart labeled for various classifications (e.g. indoor or outdoor use, etc.).

4. Given twelve labeled photographs of school activities, the learner will place each photograph in folders labeled: science, art, music, mathematics, or social studies. The learner will categorize other pictures according to other classifications in the same way.

5. Given a set of ten labeled modes of transportation, the learner will place each picture in a chart labeled: land, water or air.

6. Given a set of twelve labeled pictures of animals, the learner will place each picture in one of two folders marked for various classifications (e.g. domesticated - undomesticated; farm - zoo, etc.).

7. Given a group of twenty-four objects varied in shape, size, and color, the learner will group all like objects together (e.g. long-green, round-red, flat-blue, etc.).

8. Given a series of three to seven pictures, the learner will use all of the pictures, putting them in sequential order so the complete story is told.

9. Given an oral story and a list of five ideas or events from that story, the learner will re-organize all the ideas or events in correct sequence.

10. Given an oral story about three or more characters, the learner will write and tell about all the characters as they appear in the story.

11. Given five pictures of familiar activities and three sentences for each, the learner will select and read orally the sentence which best describes each picture.

12. Given 10 words and 10 meanings, the learner will match each word with it's meaning, getting at least 18 correct.

13. Given a list of twenty-four descriptive words the learner will match all the words which describe a similar feeling (e.g. happy, gay, jolly; tired, weary, fatigued, etc.).

14. Given a list of ten words, the learner will tell or write a synonym for *each* and use it in an oral or written sentence.

15. Given a list of ten words, the learner will tell or write an antonym for *each* and use it in an oral or written sentence.

16. Given a list of ten words, the learner will tell or write a homonym for *each* and use it in an oral or written sentence.

17. After listening to a story orally, the learner will tell or write in sequence at least five main events of the story.

18. Given a picture and a story title (orally), the learner will tell a story to support the picture and title, using at least seven sentences which include nouns, verbs, adjectives and/or adverbs.

19. Given a series of ten pictures which tell a story, the learner will record or tell what is happening in *each* picture, using at least two complete sentences with nouns, verbs, adjectives and/or adverbs for each picture.

20. Words, which the child previously missed on a vocabulary test, will be included in a descriptive paragraph accompanied by a pictorial representation of a familiar activity. Given this paragraph with an unknown word in each sentence, the learner will read it orally, pronouncing *all* the words, using the picture and context clues.

21. Given a list of ten unfamiliar words and materials (pictures, diagrams, phrases, etc.) which give contextual clues, the learner will select nine out of ten words correctly and insert these words into ten incomplete sentences about the material.

22. The learner will be given a ten-sentence paragraph which contains an unknown word in each sentence. This paragraph will describe a familiar activity and will be structured so that the tested known words give clues to the meaning of the unknown word. The learner will read the paragraph orally without error and will tell the meanings of each of the unknown words.

23. Given a story to read the learner will select words and phrases which the author has used to describe a person or place. He will write at least five words or phrases used in the story to describe a person and write at least five words or phrases from the story that describe a place (e.g. the rocky, ragged coast; dark, smelly, damp cellar, etc.).

24. Given a 100 to 300 word paragraph and five sentences, three of which apply to the paragraph, the learner will select the sentences that imply what the paragraph says.

25. Selecting an article from the newspaper, the learner will make a report to the class which includes the answer to the questions, who? when? what? where? how? and why?

26. Given three short paragraphs, the learner will label each paragraph either fact or opinion and give supportive reasons.

27. Given three short paragraphs, the learner will select the two that have similar ideas.

28. Given the IF-part of ten statements, the learner will tell or write the logical THEN-part of at least nine. (e.g. If it rains hard . . .)

29. Given a story which includes at least five supporting details for the main idea, the learner will retell in sequential order, the main idea and the supporting details.

30. Given ten words which are alike in spelling and sound but different in meaning, and given pictures showing the different meanings of each word, the learner will compose sentences for each pictured meaning.

    e.g. picture of dog – The dog will *run;*
    picture of man crossing home plate in a baseball game – Horton got one *run* in the baseball game.
    picture of a stocking with a run in it – The stocking has a *run.*

31. Given ten pairs of sentences, with a homograph in each pair, the learner will read the sentences orally, pronouncing the homograph correctly each time. (e.g. A bird can *live* in a tree. He has a *live* bird. – I like to *read.* Yesterday I *read* two stories.)

32. Given a familiar fable, the learner will write his own meaning of the story and three stated facts which support his interpretation.

33. Choosing a book to read, the learner will tell or write the main idea of the story and tell or write one thing about each of the most important characters in the story.

34. Given a literary selection (essays, poems, biographies), the learner will write five or more phrases that the author has used to describe how people feel and write his own interpretation of the selection.

35. Given materials to read independently, the learner will answer three questions for each of the following: specific information and generalizations. He will organize these answers for retelling in a written or oral report.

07: LANGUAGE USAGE

1. Given five sentences (declarative), the learner will tell the subject of each.

2. Given five sentences (declarative), the learner will tell the predicate of each.

3. Given five words or topics, the learner will tell or write a complete statement (declarative sentence) about each.

4. Given a model of a question and five statements, the learner will restate each statement as a question, orally or in writing.

5. Given ten simple sentences, the learner will separate orally or in writing each sentence into its two main parts, the subject and the predicate.

6. Given five words to be used as the subject, the learner will write five sentences with correct capitalization and punctuation.

7. Given five verbs, the learner will write five questions with the correct capitalization and punctuation.

8. Given sentences containing five uncapitalized titles of address, the learner will rewrite them correctly with 100% accuracy.

9. Given seven different kinds of proper nouns, names of people, pets, cities, countries, states, days of the week and months of the year, the learner will write two examples of each with 100% accuracy.

10. Given five sentences the learner will rewrite them as exclamatory statements by using the words, what or how, and putting in the correct punctuation mark.

11. Given sentences containing twenty common nouns, the learner will underline at least eighteen correctly.

12. The learner will write seven sentences using one of the seven personal pronouns in each sentence.

13. Given the seven personal pronouns: we, it, I, you, he, they, and she, the learner will write the correct possessive form (our, its, my, your, his, their, her) and use each in a sentence with 100% accuracy.

14. The learner will write twelve sentences using one of the twelve indefinite pronouns in each sentence.

15. Given ten sentences each of which contains one of the four kinds of noun phrases: a proper nour, a personal pronoun, a determiner and common noun, and an indefinite pronoun, the learner will underline the noun phrases and list them in columns according to the four categories.

16. Given ten incomplete sentences, the learner will complete each with the correct present tense form of the word *be*.

17. Given ten incomplete sentences, the learner will complete each sentence with the correct past tense form of the word *be*.

18. Given the pronouns, I, he, she, we, they, the learner will write two sentences for each using the subject and object function.

e.g.;	I went to the store	He and she are playing
	He hit me with the ball	He played with her

19. Given the possessive form of five personal pronouns: my, her, your, our, and their, the learner will write a sentence for each using the special form of the pronoun that is used when a noun is omitted. (e.g. This is mine.)

20. Given 20 prepositions, the learner will select and use 10 in sentences, getting at least 9 correct. (Will continue until all 20 are used.)

21. Given ten sentences, five of which contain adverbials of place, (e.g. The boy fell *into* the pond.) the learner will correctly underline the adverbials of place and write sentences containing other adverbials of place with 100% accuracy.

22. Given ten sentences, five of which contain an adverbial of manner (e.g. He worked *cheerfully*.), the learner will correctly underline the adverbials of manner and write five sentences in which he uses adverbials of manner with 100% accuracy.

23. Given the three kinds of grammatical structures: a noun phrase, an adjective and an adverbial of place, the learner will write two sentences for each using the correct form of *be*.

24. Given a list of adjectives that tell what kind (e.g. white, black, frisky, playful, excited, young, spirited, lively, active and alert) and a list of pets, the learner will choose a pet and write a paragraph describing it, using correctly at least five of the adjectives given.

25. Given a model, the learner will write his own poem using correct capitalization and punctuation.

26. Given a model of a letter with each of the five parts labeled (heading, greeting, body, closing, signature) the learner will write a letter with each part written correctly.

27. Given a model of an addressed envelope, the learner will address an envelope correctly.

28. Given ten sentences each of which contain structures requiring the use of the comma (e.g. after each word in a series, to set off a name that is used in direct address, to set off the words, yes and no at the beginning of a sentence, to separate the city from the state, to separate the day from the year, the use in letter writing and the use in direct quotation), the learner will insert a comma at the appropriate place getting nine correct.

29. Given a written dialogue between two people containing twenty errors in punctuation, the learner will punctuate correctly making no more than two errors.

30. Given written materials containing two separate but related ideas, the learner will rewrite the materials into two paragraphs, identifying the first line of each.

31. Given written material of two paragraphs, containing run-on sentences, the learner will correctly rewrite the run-on sentences in each paragraph.

32. Given written material of five paragraphs, the learner will underline the topic sentences of each paragraph.

33. Given ten sentences in which verbs have been omitted and a list of ten verbs, one for each sentence, the learner will write the correct present tense form of the verbs given to agree with the subjects.

34. Given ten incomplete sentences and ten regular verbs (those forming past tense by adding *ed*) the learner will complete each sentence with the correct past tense form of the verb given.

35. Given ten incomplete sentences and ten irregular verbs (e.g. run-ran, buy-bought, drink-drank), the learner will complete each sentence with the correct past tense form of the verb given.

36. Given ten subjects and a list of ten verbs, the learner will write sentences, including these subjects and the correct *be + ing* form of the given verbs (is running, were taking, etc.).

37. Given ten subjects and a list of ten verbs, the learner will write sentences which include these subjects and the correct present tense form of *have + the past participle* of the given verbs.

38. Given ten subjects and a list of ten verbs, the learner will write sentences which include these subjects and the correct *had + the past participle* of the given verbs.

39. Given five pairs of short sentences, each pair having the same subject (e.g. Mary went swimming. Mary had a good time.), the learner will combine the two sentences into one sentence with a compound predicate, using the conjunctions *and, or*, or *but*. (Mary went swimming and had a good time.)

40. Given five pairs of short sentences, each pair having the same predicate (e.g. Mary plays ball. John plays ball), the learner will write the sentence pairs as one sentence with a compound subject using the conjunctions, *and, or*, or *but* and the correct form of the verb. (Mary and John play ball.)

41. Given ten pairs of sentences with five pairs containing the same subject (e.g. John was courteous. John was understanding.) and five pairs containing the same predicate (e.g. Mary was courteous. John was courteous.) the learner will rewrite each pair as one sentence using the conjunction *and* and the correct form of *be*. (e.g. John was courteous and understanding; Mary and John were courteous.)

42. Given five pairs of sentences, each sentence of the pair having its own subject and predicate (e.g. The sky cleared. We could see the sun.), the learner will write each sentence pair as a compound sentence, using a comma before the conjunction (e.g. The sky cleared, and we could see the sun.) with no errors.

43. Given five pairs of sentences, each pair containing the same noun phrase, the learner will rewrite each pair so that one sentence of pair becomes a relative clause (e.g. The boy cut the grass. The boy went home.) becomes (The boy who cut the grass went home).

44. Given a topic, the learner will write a two paragraph paper in which he uses at least one example of each: a compound subject, a compound predicate, a relative clause.

WORK STUDY SKILLS

08: DICTIONARY

The objectives in this section are so designed that the learner will use the dictionary in locating and

understanding the spellings, pronunciations, meanings and functions of words. The learner will utilize skills acquired in alphabetizing, diacritical marking, and syllabicating.

Teachers are aware of different pronunciations and functions of diacritical marks used by various publishers. However, the criteria for validity are the dictionaries and texts used in the classrooms.

1. Given a dictionary, the learner will tell at least five of its functions (e.g. alphabetizing, spelling, pronunciation, meaning, syllabication, identification of parts of speech, word origin, affixes, finding synonyms, etc.).

2. Given a dictionary and a definition of entry and guide words, the learner will locate and write three examples of both types of words.

3. Given a list of ten pairs of guide words and fifteen entry words, the learner will write the entry word for each pair of guide words, getting fourteen out of fifteen correct.

4. Given a dictionary and a list of ten words, the learner will locate the pair of guide words for each listed word and record the page number.

5. Given ten picture words, the learner will use his dictionary to locate each of the picture words and will tell the meanings of all ten words.

6. Given a list of ten words, the learner will write the words in alphabetical order by first letter only, using the dictionary to check.

7. Given a list of ten words, each beginning with the same letter, the learner will write each word in alphabetical order by the second letter using the dictionary to check.

8. Given five sets of three words, each set containing words having identical first and second letters, the learner will write the words in alphabetical order according to the third letter.

9. Given ten sets of three words, each set having identical first three letters, the learner will alphabetize them by numbering each word within the set 1, 2, 3; getting all of them correct.

10. Given a list of twenty words in a mixed order, the learner will alphabetize them up to the fourth letter with no errors.

11. Given a list of ten words and a dictionary or glossary, the learner will write one of the meanings for each word.

12. Given four sets of three sentences and four homographs, one in each set, the learner will locate each homograph in the dictionary and write which meaning is inferred in each sentence context with 100% accuracy.

13. Given a list of fifteen words, ten of which are misspelled, the learner will use the dictionary to write the correct spelling and meaning for at least nine out of ten.

14. Given a list of ten pairs of homonyms and ten incomplete sentences, the learner will write one of the homonyms in the sentence according to sentence context; using the dictionary to check the meanings.

15. Given a list of ten unfamiliar words and a dictionary, the learner will write an antonym and use the original word and its antonym in an oral or written sentence.

16. Given a list of ten unfamiliar words and a dictionary, the learner will write a synonym and use the original word and its synonym in an oral or written sentence.

17. Given a list of ten unfamiliar words and using a dictionary, the learner will write an antonym and a synonym for each and use the word, its antonym and synonym in an oral or written sentence.

18. Given a list of fifteen words in mixed order containing variant sounds of the vowels, the learner will mark diacritically the vowels to show the difference in pronunciation of the long and short sounds by using the long mark (macron) and the short mark (breve). He will check each of his markings with the dictionary, getting fourteen out of fifteen correct.

19. Given a list of fifteen words in mixed order containing variant sounds of the vowels "a" and "u", the learner will mark diacritically the vowels to show the difference in pronunciation of each, using the tilde. (The tilde's use varies in different dictionaries: namely, Webster and Thorndike-Barnhart.)

20. Given the key words, horse and order, the learner will make his own list of ten words which have the sound as in the given key words, checking his list in the dictionary and marking each word that has a circumflex vowel sound.

21. Given a selected list of twenty words and a key word, such as thought, saw, caught and all – in which the vowel sound is respelled with the circumflex (o), the learner, using his dictionary will classify in columns under the key words, each word from the list with 100% accuracy.

22. Given a list of fifteen words containing the five vowels in which each vowel is represented by the schwa sound, the learner will mark diacritically the vowels making the schwa sound, using his dictionary to check each of his markings, getting fourteen out of fifteen correct.

23. Given a list of fifteen words of which ten contain the sounds represented by the single dot and the two-dot (dieresis) symbols, the learner will mark diacritically those vowel sounds. He will check each of his markings with the dictionary, getting fourteen out of fifteen correct.

24. Given ten pairs of sentences in which homographs are used, the learner will use the dictionary to check the correct pronunciation of each word according to the usage in the sentence. Beside each sentence the learner will write the word with the correct accent or diacritical mark according to the dictionary.

Example:

a. A bird can *live* in a tree. (liv̆).
He has a *live* bird. (līve).

b. Bob has a *present.* (preź ent)
Bob will *present* the gift. (pri zent́)

25. Given five words which when pronounced with different accents have different meanings, the learner will use the dictionary to place the accent and write a sentence illustrating the two different meanings for each word.

26. Given a selected list of ten pairs of words containing vowel diagraphs that have the same letter combination but more than one sound (receive, neighbor, breath, tease), the learner will find the respelling for those words in the dictionary and write each word with the correct diacritical marking.

27. Given a list of fifteen words, including the o͞o respelling used for the pronunciation of "u" as in juice (jo͞os) or school and with the oo′ respelling used for the pronunciation of "u" as in push (po͝osh) or took, the learner will classify the fifteen words into two lists.

28. Given a list of twenty new words from a story and aided by a pronunciation key, the learner will examine and correctly pronounce nineteen of the twenty new words correctly.

29. Given a mixed list of twenty polysyllabic words, the learner will mark the accents and place diacritical markings in each word getting eighteen of twenty correct, using the dictionary.

30. Given a dictionary, a list of five prefixes and ten known root words, the learner will check the meanings of the prefixes and write new words, using each in a sentence correctly.

31. Given a dictionary, a list of five suffixes, and ten known root words, the learner will check the meanings of the suffixes and write new words, using each in a sentence correctly.

32. Given ten sentences, the learner will use a selected key (s., v., adv., adj., det., prep.) and label the parts of speech for each as used in each sentence. He will compare his labels with the dictionary.

33. Given twenty words spelled as in the dictionary respelling key, with diacritical marks, the learner will write the spelling of at least eighteen of twenty words correctly, comparing the words with the dictionary.

34. Given fifteen sentences with one word underlined in each for independent study, the learner will locate the word, select the definition that fits the context, and write the synonym for the underlined beside each sentence.

09: GLOBES AND MAPS

1. Shown a globe, the learner will correctly tell three functions of the globe and tell its color scheme representation of the earth's surfaces; e.g., blue is water; green is land surface.

2. Shown a globe, the learner will identify three land areas (continents) and two water areas (oceans) by name.

3. Given a globe, the learner will name the imaginary lines (globe lines) which separates the two poles on the globe and tell how the earth is divided (equator and hemispheres).

4. Given a globe, the learner will correctly name and locate the cardinal directions of north, south, east and west using the equator as a reference point.

5. Given a globe, the learner will tell the relationship of the cardinal directions to the center of the earth. (Example: up, toward, down, farthest points north or south.)

6. Given a wall map of any city, state, or country, the learner will correctly locate the cardinal directions on the map.

7. Given a map of the world, the learner will correctly point to the areas that represent land and the areas that represent water on the map.

8. Given a map of his neighborhood, the learner will locate at least two of the places of importance to him. (e.g. school, his block, playground, stores, factories).

9. Given a map of the metropolitan area, the state, the country, or the world, the learner will locate his city, state, or country on the appropriate map.

10. Given a physical map, the learner will use the color designation key to locate the varying altitudes of the land from below sea level to the mountains.

11. Given a physical map of the world, the learner will correctly write the names of all the continents and all the oceans.

12. Given a simple road map showing two major highways, ten towns, and the distances between towns, the learner will make a list of all the towns shown on the map.

13. Given a simple road map showing two major highways, ten towns, and the distances between towns, the learner will list the distances between nine pairs of towns.

14. Given a simple road map showing two major highways, ten towns, and the distances between towns, the learner will tell in which direction one must travel to get from a given town to another.

15. Given a scale of miles showing measured distances on a map between two points and a specific problem to solve, the learner will measure the exact distance between two given points.

16. Given a physical-political world map, the learner will locate a city, a country, a continent, a lake, a river, a sea, an ocean, a coastline, a bay, a peninsula, a delta, and an island. He will construct his own key to show the location of these features.

17. Given illustrated keys on a map representing crops, products, populations, water-ways, railroads, highways, and natural resources, the learner will locate on the map *each* of the items listed above to answer specific questions.

18. Given four kinds of untitled maps, the learner will correctly write the title of each map. Examples might include: 1) physical map, 2) political map, 3) product map, and 4) physical-political map.

10: GRAPHS

1. Given a pictorial graph (e.g. weather, population, attendance, scores, etc.) the learner will interpret the data orally or in writing with 100% accuracy.

2. Given statistics, the learner will construct a pictorial graph that coretly shows all of the given data with 90% accuracy.

3. Given a pictorial graph, a chart, or a map, the learner will point out at least five items to verify and support the data given in his oral report.

4. Given a set of percentage facts on four items, the learner will correctly construct a line graph that will illustrate the facts with 100% accuracy.

5. Given a circle graph showing the divisions of a whole, the learner will rank the data and tell how many segments or divisions there are. The learner will compare segments or divisions by answering questions about each part with 100% accuracy.

6. Given a line graph, the learner will interpret and compare by telling or writing what the data means (using the most, least, total, etc.) with 100% accuracy.

7. Given a bar graph, the learner will read the title of the graph, identify by either telling or writing what scale of measurement has been used, and tell what conclusions can be drawn from the graph with 90% accuracy.

8. Given a bar graph showing the population facts of five locations, the learner will list the approximate population of each given locality and compare the population of one location with other four localities with 100% accuracy.

9. Given a graph and a table on which to locate specific information, the learner will select three facts from each and compare the information pictured in both sources with 100% accuracy.

10. Given a graph (pictorial, line or circle graphs) and a set of statistics (about the same subject), the learner will select three facts from the graph and statistics, and compare the figures in both sources.

11. Given a newspaper or magazine article containing picture graphs and a table on the final results of an event or activity (e.g. United Foundation Torch Drive, baseball scores, U.S. Census, etc.) the learner will state at least three detailed points concerning the outcome of the events or activity using the graphs and/or tables to support his facts.

12. Given a flow chart showing any organization (i.e. the family, city, state or federal government, etc.) the learner will state either orally or in writing the ranking positions of each of its members and label the major branches with 100% accuracy.

13. Given a line graph showing averages over a period of time, the learner will compare the averages by writing or telling the highest or lowest averages for any specified period of time.

11: TABLE OF CONTENTS AND INDEX

1. Given a table of contents, the learner will correctly find the chapter headings or titles and the page numbers with 100% accuracy.

2. Given a list of topics and a table of contents, the learner will find the unit titles, chapter headings, sub-titles and page numbers related to the topic and record them with 100% accuracy.

3. Given a topic, the learner will do independent study using the indexes of at least five books to find and write the main entries and list the pages that contain material about the topic.

4. Given five headings and a list of subtopics in random order, and given the pages on which the information is discussed, the learner will write the subtopics under the correct headings and alphabetize them as they would appear in an index.

5. Given a list of ten items, and the index of a given book, the learner will find all the items and write information about each.

6. Given only the first line of eight poems, the learner will select and write correctly the title, author and page number of each poem from a first line index poetry book.

7. Given a paper to write on any subject, the learner will use the indexes of five books to locate all the information related to the subject, listing the main entries in alphabetical order, arranging sub-headings in order by pages, listing "see also" entries on page numbers of any segment about that subject.

12: CARD CATALOGUE

1. Given the title of a book, the learner will locate in the card catalogue the title, name of author, publisher, and copyright date, with 100% accuracy.

2. Given the titles of non-fiction books, the learner will find in the card catalogue, the title card, the author card and the subject cards for each book.

3. Given a topic, the learner will find information about the topic; using the card catalogue to find

and list all available books on the subject in bibliography form (author, title, publisher and copyright date).

4. Using the Bibliography in Objective #3, the learner will look under the last name of every author on his list to find and record other books by that author in bibliographical form.

5. Using the same topic (see Objective #3), the learner will use the card catalogue to find at least one other subject related to his topic (e.g. Space-travel: Rockets). The learner will write the sub-topic and form a bibliography about it.

13: ENCYCLOPEDIA

1. The learner will find all available sets of encyclopedias in the school's media center and list them in alphabetical order without error.

2. Given two sets of encyclopedias, the learner will look up a topic and list sub-topics from which he might take notes.

3. Given a hecto-sheet of an index from an encyclopedia, containing ten sources of information, and a list of questions, the learner will correctly choose nine of the ten facts to answer each of the questions.

4. Given the index of an encyclopedia and an outline composed of a single heading and four main topics, the learner will write the page numbers most useful in locating information about the four main topics, for an oral or written report.

14: OTHER RESOURCE MATERIALS

1. Given four main parts of a book (table of contents, preface, glossary and index), and given the characteristics or functions of these parts, in random order, the learner will correctly match each part with its function. (Some books do not contain all parts.)

2. Given an assignment concerning four events of the past year, the learner will correctly find, in the almanac, six facts concerning each of the events and take notes on the information for an oral or written report.

3. Given the names of six cities, the learner will correctly use the atlas to find and record the latest population figures for each city.

4. Given a non-fiction book, newspaper or magazine article, with at least three paragraphs, the learner will write a sentence or topic outline from the paragraphs. Each sentence or topic must state the main idea of each paragraph.

5. Given a short factual selection of 175 words taken from a newspaper or magazine, the learner will briefly state, in telegraph-type phrases, five main ideas brought out in the article listing at least two details to support each main idea.

6. From an article and a group discussion used to develop six main topics brought out in a news report, the learner will use these main topics to write his own report giving at least four details to support his own arguments.

7. Given at least three or more sources of information, the learner will write a research report using direct quotations. The learner will prepare a bibliography crediting each source.

8. Given a Dewey number, the learner will identify the main subject category and point out the shelf area where the books in that classification are located.

9. Given an author, title and classification for a book, the learner will locate the book on the shelf and show it to the teacher.

10. Given five books of various classifications, the learner will replace them in the correct location on the shelf.

15: USE OF REFERENCE MATERIALS

Having mastered the Work Study Skills in previous learning sequences, the learner will now have the opportunity to use these skills creatively. The ultimate goal of this strategy of learning is to help the child become more proficient in problem solving. The learner may express himself by writing, dramatizing, creating models (tapes, movies, filmstrips, slides, transparencies, puppets, charts, diorama, etc.).

1. From five paragraphs, (selected by the learner) the learner will underline each topic sentence and rewrite these topic sentences in topic outline form.

2. From a 100 to 300 word article (of his own selection), the learner will write the main topic as the title; make a simple sub-topic outline of at least four to eight important points (using correct punctuation, capitalization and indentations in the outline).

3. Given a list of biographies of famous people, the learner will select one and write at least five outstanding facts about the person.

4. Selecting a topic, the learner will take notes including at least six major facts (about the topic) in preparation for a three minute radio script.

5. Given a specific topic and a bibliography, the learner will select at least four sources of information and write a list of references.

6. The learner will organize his own bibliography, (e.g. titles, authors, publishers, copyright dates and pages) of the books used for a specific topic.

7. From a 500-word oral report or dictated lesson, the learner will write a 100-word summary using five relevant facts.

16: USE OF OTHER MEDIA

In order for the learner to perform the following tasks, it is imperative that he be taught the proper handling, care and operation of the equipment to be used. This training may be provided by the homeroom teacher or the Media Center Specialist.

1. Given a filmstrip viewer and a filmstrip, the learner will view the filmstrip and tell or write the five important points about the filmstrip.

2. Given a cassette or tape recorder with earphones and a set of questions, the learner will play the tape and write the answers to the questions.

3. Given a cassette and a tape, with a set of directions, the learner will record an original story, poem, or read a story from a book, etc.

4. Given a model on the Audio Flash Card machine, the learner will listen and record as directed (e.g. reading vocabulary, sentence structure, etc.).

5. Given a film-loop machine and film-loop, the learner will view the loop and perform the given task as seen in the film.

6. Given a record player and a record, the learner will listen to the record and retell the information orally or in writing.

7. Given a tape recorder and earphones connected to the listening post, the learner will follow directions orally or in writing.

DOLCH BASIC WORD LIST

Pre-Primer Words	Primer	Level 1	Level 2	Level 3
1. a	1. all	1. after	1. always	1. about
2. and	2. am	2. again	2. around	2. better
3. away	3. are	3. an	3. because	3. bring
4. big	4. at	4. any	4. been	4. carry
5. blue	5. ate	5. as	5. before	5. clean
6. can	6. be	6. ask	6. beat	6. cut
7. come	7. black	7. by	7. both	7. cone
8. come	8. brown	8. could	8. buy	8. draw
9. find	9. cut	9. every	9. call	9. drink
10. for	10. came	10. fly	10. cold	10. eight
11. funny	11. did	11. from	11. does	11. fall
12. go	12. do	12. give	12. don't	12. far
13. help	13. eat	13. going	13. fast	13. full
14. here	14. four	14. had	14. first	14. got
15. I	15. get	15. has	15. five	15. grow
16. in	16. good	16. her	16. found	16. hold
17. is	17. have	17. him	17. gave	17. hot
18. it	18. he	18. his	18. goes	18. hurt
19. jump	19. into	19. how	19. green	19. if
20. little	20. like	20. just	20. its	20. keep
21. look	21. must	21. know	21. made	21. kind
22. make	22. new	22. let	22. many	22. laugh
23. me	23. no	23. live	23. off	23. light
24. my	24. now	24. may	24. or	24. long
25. not	25. on	25. of	25. pull	25. much
26. one	26. our	26. old	26. read	26. myself
27. play	27. out	27. once	27. right	27. never
28. run	28. please	28. open	28. sing	28. only
29. said	29. pretty	29. over	29. sit	29. own
30. see	30. ran	30. put	30. sleep	30. pick
31. the	31. ride	31. round	31. tell	31. seven
32. three	32. saw	32. some	32. their	32. shall
33. to	33. say	33. stop	33. these	33. show
34. two	34. she	34. take	34. those	34. six
35. up	35. so	35. thank	35. upon	35. small
36. we	36. soon	36. them	36. us	36. start
37. where	37. that	37. then	37. use	37. ten
38. yellow	38. there	38. think	38. very	38. today
39. you	39. they	39. walk	39. wash	39. together
40. red	40. this	40. were	40. which	40. try
	41. too	41. when	41. why	41. warm
	42. under		42. wish	
	43. want		43. work	
	44. was		44. would	
	45. well		45. write	
	46. went		46. your	
	47. what			
	48. white			
	49. who			
	50. will			
	51. with			
	52. yes			

SECTION II: MATH BEHAVIORAL OBJECTIVES

The Mathematics Behavioral Objectives are a sequential listing, from simple to complex, of the mathematics skills deemed essential to the learner's grasp of the basic mathematical facts and concepts necessary for effective participation in today's world. Major emphases have been placed upon Pre-Number Skill, Arithmetical Computational Skills, and Fractional Numerals. However, cross-sequencing of categories would enlarge those skill areas to include, Reading, Writing and Counting, Measurement, Geometry, Graphs, Numeration Systems, Integers, Logic, and Probability.

Except where otherwise noted, learners must achieve a standard performance of 90% before mastery can be assumed. However, throughout the learner's progress in school, each teacher is expected to maintain the skills mastered earlier with increasingly complex content.

Categorization of Math Objectives

Code		No. of Objectives
20	Pre-Number	22
21	Reading – Writing – Counting	47
22	Addition/Subtraction	29
23	Multiplication/Division	27
24	Fractions	41
25	Measurement	47
26	Geometry	39
27	Logic	8
28	Numeration Systems	16
29	Integers	10
30	Graphs	15
31	Probability	7

20: PRE-NUMBER

1. Given a group of not more than 15 objects, the learner will sort all the objects according to a given direction, in size, shape, color, thickness or other physical features.

2. Given a set of 2 to 15 objects, the learner will compare them by orally using taller(est)/shorter(est) and/or other comparative terms in objective 20.

3. Given a cut-out pattern of a shape or a picture of a shape, the learner will name each of the following shapes: circle, square, triangle, rectangle and oval.

4. Given a simple line drawing, containing a circle, square, rectangle and/or a triangle, the learner will find and identify them by marking or pointing to one or more of the above shapes in the simple drawing.

5. Given a simple pattern, (which may consist of 2 or more objects) the learner will, by telling or marking, repeat and/or complete the pattern.

6. Given a set of, or a pictured set of three or more objects, the learner will indicate by telling, pointing or marking, when an object is below, beside, and/or between in relationship to one or more objects.

7. Given 2 equivalent sets of objects with not more than 10 members in each, the learner will tell by matching each member in set A to a member in set B, that there are "as many" members in set A as in set B.

8. Given two nonequivalent sets with not more than 10 members in each, the learner will tell by matching each member in a set A to a number in set B, which set has more objects and which has less.

9. Given a set of not more than 10 objects, the learner will orally count all the objects in the set. (rote counting)

10. Given sets with 0 to 10 members and the numeral cards from 0 to 10, the learner will indicate how many objects are in the set by matching the numeral to the set.

11. Given cards of pictured sets from 1 to 10 in random order, the learner will arrange the cards in sequential order.

12. Given a set of cards with numerals from 0 to 10 in rand .a order, the learner will arrange them in order from 0 to 10.

13. Given 2 disjoint sets of objects (totaling no more than 10 members), the learner will tell orally how many members in each set.

14. Given 2 disjoint sets (totaling no more than 10 members), the learner will push them together and tell orally, how many members in the union of the sets.

15. Given a set of objects (10 or less), the learner will tell how many members are in the set; he will then remove a given number of objects and tell how many members are left.

16. Given a line of 10 objects, the learner will indicate by stating orally, the ordinal position of all of the members.

17. When shown an object or a picture, the learner will tell what the following objects are used for and given a need or use, the learner will identify the instrument to use.

    Thermometer
    Ruler
    Calendar
    Clock
    Money

18. Given the model of a clock, with time to the hour, the learner will say the time.

19. Given a nickel, dime, quarter and dollar, the learner will name each and compare value of each by telling which coin can buy more.

20. Given the following terms and other similar terms, the learner will use them correctly when given oral written directions:

above	far	none
after	fast, faster, fastest	number
all	few	o'clock
as many as	fifth	off
back	first	or
before	fourth	other
begin	forward	out
behind	front	outside
below	full	pair
beside	half	round
between	height	row
big, bigger, biggest	hot/hotter/hottest	same
cent	in, inside	second
center	join	short/shorter/shortest
circle	last	side
close/closer/closest	late/later/latest	slow/slower/slowest
coin	light/lighter/lightest	small/smaller/smallest
cold/colder/coldest	little	some
corner	long	third
deep/deeper/deepest	low	today
down	many	under
each	measure	up
early/earlier/earliest	member	whole
end	more	wide/wider/widest
edge	much	yesterday
empty	near/nearer/nearest	

21. Given three containers, two of the same size and shape with the same amount of liquid, and one of a different size and shape, the learner will tell orally, after pouring the liquid from one of the containers into the empty container, that two containers hold the same amount of liquid.

22. Given three different size and shape containers with liquid in them, the learner will tell which container has the most liquid and which has the least.

21: READING – WRITING – COUNTING

1. Given a set of objects or a pictured group of objects not exceeding 10, the learner will write the numeral applying to that set.

2. Given any numeral from 0-10, the learner will tell or write the numeral that comes before or after the given numeral.

3. Given any incomplete three number sequence from 0-10, the learner will supply the missing numeral, orally/in writing.

4. Given a model of a number line in division of one, with at least three numerals missing, the learner will say/write the missing numerals.

5. Given a set of objects or pictured objects, not to exceed twenty (20), the learner will orally count the objects.

6. Given a picture of up to twenty (20) ordered objects, the learner will identify the ordinal position of all the objects.

7. Given a set of objects from 11-20, the learner will read and write the numeral applying to the set.

8. Given any numeral from 10-20, the learner will rename the numeral in expanded notation.

9. Given the following symbols: +, , =, <, >, ≠, the learner will identify orally/in writing, the name of each symbol.

10. Given the numerals 1/2, 1/4, 1/3, the learner will name the numeral.

11. Given any set of objects from 1-100, the learner will name the numeral.

12. Given bundles of sticks grouped in tens, the learner will orally count by tens in multiples of 10 through 100.

13. Given a model of number line in divisions of 10, with at least three numerals missing, the learner will indicate by writing/verbalizing, the missing numerals.

14. Given oral/written instruction to count to 100 by 5's, the learner will count orally by fives to 100.

15. Given 10 models of a number line (numeral less than 101) in division of 5, with at least three numerals missing, the learner will indicate by writing/verbalizing, the missing numerals.

16. Given any 10 two-digit numeral, the learner will read/write the numeral.

17. Given 10 incomplete sequences of numerals, 0-100, counting by ones, with a maximum of five blank spaces, the learner will write the missing numerals.

18. Given 10 incomplete three number sequences to 100 with only a "between" numeral given, the learner will write the numeral coming between the known numerals.

19. Given 10 incomplete three number sequences to 100 with the *before* and *after* numerals stated, the learner will write the numeral coming between the known numerals.

20. Given 3 number lines in divisions of 2, with at least three numerals missing, the learner will indicate by writing/verbalizing the missing numerals with 100% accuracy.

21. Given pictures of objects and pictured sets (enclosed in braces), the learner will underline all of the sets.

22. Given pictured sets with 3 or less numbers, the learner will indicate orally or by underlining, all those sets which are empty.

23. Given 5 pairs of pictured sets, the learner will write =, ≠, between each pair of sets.

24. Given 10 incomplete set equation, the learner will complete the equations by writing the symbol for union or difference to make each equation true.

25. Given 5 pairs of sets with N notation, the learner will make each sentence true by writing the symbol = or ≠.

26. Given any ten numerals from 10 to 100, the learner will rename in expanded notation, orally/writing, at least two other names for each.

27. Given oral/written instruction to count by 2's, 3's, and 4's to 36, the learner will count by 2's, 3's and 4's to 36.

28. Given 10 objects or pictures of objects, numbering from 0 to 20, the learner will write the numeral and number word for each.

29. Given 10 incomplete sequences of even whole numbers less than 102 and counting by two's, the learner will verbalize or write in the missing numerals.

30. Given 10 incomplete sequences of odd whole numbers less than 100 and counting by two's, the learner will verbalize or write in the missing numerals.

31. Given 5 pairs of sets, the learner will write ≈ or # between each pair of sets.

32. Given 10 numerals from 0 to 999, the learner will verbalize/write the value of any digit within that set of 10 numerals.

33. Given 10 incomplete sequences of numbers from 0 to 200 (counting by 1's, 2's and 5's), the learner will say/write in all of the missing numerals.

34. Given symbols X, ÷, and $\sqrt{\ }$, the learner will orally name the symbol.

35. Given orally any numeral from 0 to 999, the learner will write the numeral.

36. Given 10 incomplete set equations, the learner will complete the equations by writing the symbol for union, difference or intersection to make each equation true.

37. Given an incomplete sequence of numbers (5 or less missing) from 200 to 1,000, (counting by 1's, 2's and 5's) the learner will say/write in all of the missing numerals.

38. Given 10 incomplete number patterns (0-1,000) with no more than 5 blank spaces, the learner will identify orally/in writing, the missing numerals.

39. Given 10 numerals with 2, 3 and 4 place digits, the learner will round off the numbers to the nearest tens, hundreds or thousands.

40. Given 10 sets of objects grouped in multiples of tens, the learner will write the number words as they apply to each group.

41. Given any ten numerals from 0 to 100, the learner will write the number words and vice versa.

42. Given 10 numerals up to 100,000, the learner will read/write the numerals and number words.

43. Given orally, any 10 decimals less than thousandths, the learner will write each numeral as a decimal.

44. Given 10 numerals up to 1,000,000, the learner will read/write the numerals and number words.

45. Given 10 numerals to 1,000,000, the learner will rename them in expanded notation.

46. Given 10 seven digit numerals, the learner will state the place value of the digits.

47. Given any 10 percentages, the learner will rename it as a decimal using tenths, hundredths or thousandths and vice versa.

22: ADDITION AND SUBTRACTION

1. Given a number line with the basic set of whole numbers, the learner will show, by marking or pointing, any addition or subtraction algorithm with sums through nine.

2. Given any completed addition or subtraction algorithm with sums through nine, the learner will correctly label each numeral with the word sum or addend.

3. Given 10 incomplete number sentences with sums through nine, the learner will supply the correct operational symbol.

4. Given 10 incomplete number sentences with sums through 9, the learner will write = or ≠ to complete the sentence.

5. Given 10 incomplete number sentences using numbers less than 10, the learner will write $<$, $>$, to complete each sentence.

6. Given a number less than 10, the learner will name all possible addition and subtraction combinations for it.

7. Given 10 simple addition and subtraction story problems with sums to 9, the learner will write the equation and solve each.

8. Given any 20 addition or subtraction facts with sums through 9, orally or in writing, the learner will write or say the 20 sums, or addends.

9. Given 10 addition algorithms with sums through 9, the learner will rewrite the algorithm to show that the order in which two numbers are operated on does not change the result.

10. Given a set of 10 addition problems each with more than two addends with sums to 9, the learner will solve each.

11. Given 10 basic addition or subtraction algorithm with sums through 9, the learner will write an inverse fact of each given algorithm.

12. Given 10 basic addition or subtraction facts, the learner will write all of the related facts.

13. Given 10 addition or subtraction equations, (sums to 9) with either sum or addend missing, the learner will write each missing addend or sum.

14. Given 10 addition and subtraction equations, sums to 18, with either sums or addends missing, the learner will write each missing addend or sum.

15. Given the basic 100 addition and the basic 100 subtraction facts test, the learner will compute each.

16. Given 10 simple addition and subtraction story problems, with sums to 18, the learner will write the equation for each.

17. Given a set of 10 addition problems, each with 3 or more one-digit addends, the learner will solve all problems.

18. Given 5 numbers between 18 and 100, the learner will rename at least 4 possible addition and subtraction combinations for each.

19. Given any 3 one-digit addends, the learner will write the addends in different groupings to show that the way in which these addends are grouped does not affect the sum.

20. Given 10 addition or subtraction algorithms, each having 2 or 3 digit numerals and not requiring regrouping; the learner will write the missing sums or addends.

21. Given any 10 addition or subtraction algorithms, using numerals of 2 digits and requiring regrouping, the learner will compute each.

22. Given 10 column addition algorithms, with 4 or 5 two-digit addends and requiring regrouping, the learner will solve all problems.

23. Given 10 mixed addition or subtraction algorithms having 3 digit numerals and requiring regrouping or renaming all columns, the learner will write the answers to each.

24. Given 10 addition problems with 3 or 4 digit numerals and requiring regrouping, the learner will write the answers.

25. Given 10 subtraction algorithms of 4 or 5 digits and requiring regrouping in any column, the learner will compute the difference orally or in writing.

26. Given 10 addition and subtraction algorithms with 1, 2 and 3 place addends written in horizontal form, the learner will rewrite each problem in columns and perform the necessary operation.

27. Given 10 story problems which employ higher level addition or subtraction facts, the learner will write and solve an equation for each problem.

28. Given 10 two-digit mixed addition and subtraction equations, the learner will write a story problem for each.

29. Given 10 story (higher level) problems which employ both subtraction and addition for their solution, the learner will write and solve the equations for each problem.

23: MULTIPLICATION AND DIVISION

1. Given a set of objects, the learner will partition that set into a given number of equivalent subsets and orally indicate the number in each set.

2. Given a multiplication fact, the learner will illustrate that fact by pointing or marking on the number line.

3. Given 5 rectangular arrays, not square, the learner will write 2 multiplication sentences and 2 division sentences for each.

4. Given 10 multiplication facts with products less than 50, the learner will rewrite the products as repeated addition.

5. Given 2 factors, the learner will point to the product on the 100 grid square.

6. Given 10 incomplete multiplication and division equations, with an unknown in any position of 20 or less, the learner will write the missing factors or products.

7. Given any multiplication fact, the learner will write its family of facts.

8. Given the set of counting numbers to 50, excluding the number one (1), the learner will show primes by crossing off all numbers that are multiples of another number.

9. Given 10 two-digit composite numbers, the learner will write a factor tree for each.

10. Given the multiplication and division facts test, the learner will compute each within the designated time.

11. Given 10 multiplication problems in the form (a x b) x c, using one-digit numbers, the learner will rewrite the problems in the form a x (b x c).

12. Given any basic division fact, the learner will write or say the missing factor of any multiple of 10 divided by 10.

13. Given 10 division problems with each product being a multiple of the known factor, the learner will use repeated subtraction and write the missing factor.

14. Given 10 simple division problems, the learner will distribute division over addition in solving the problems.

15. Given 10 multiplication problems, tens multiplied by ones, the learner will regroup ones and write the products.

16. Given 10 division problems with two-digit products that are not multiples of the one-digit factors, the learner will write the solution to the problems and prove each using the standard multiplication algorithm.

17. Given 10 division problems, tens divided by ones, the learner will write the solution to the problems and prove by multiplication.

18. Given 10 problems with 3 or 4 digit products divided by one-digit factors, the learner will write the solutions to the problems and prove each by multiplication.

19. Given 10 multiplication problems, hundreds multiplied by tens, the learner will solve each.

20. Given 10 multiplication problems, hundred multiplied by hundreds, the learner will solve them.

21. Given 10 problems with 3 or 4 digit products which are multiples of ten, divided by multiples of ten, the learner will write the solutions to the problems and prove each by multiplication.

22. Given 10 problems with 3 or 4 digit products, each divided by a 2 digit factor that is not a

multiple of the products, the learner will write the solutions to the problems and prove each by multiplication.

23. Given 10 division problems with 5 digit products divided by 3 digit factors, the learner will write the solution to the problems and prove by multiplication.

24. Given 10 mixed multiplication and division story problems, the learner will write and solve each equation.

25. Given 10 products less than 100, the learner will write all the factors of each product.

26. Given 10 whole numbers less than fifteen, expressed with exponents one through ten, the learner will write each as a product.

27. Given 10 products less than 100, the learner will write each number as a product of prime factors in terms of power of primes.

24: FRACTIONAL NUMERALS

1. Given a picture or a simple geometric shape, the learner will draw a line dividing the picture or shape into two equal parts and will call each part one half.

2. Given a worksheet on which there are drawings of three shapes divided into halves, thirds and fourths, the learner will write the fractional name on each of the equal parts of each shape.

3. Given a worksheet on which there are drawings of six shapes under each of which has been written the fractions 1/2, 1/3, 1/4, 1/8, 2/3, 3/4, the learner will shade each given shape to illustrate the fractional part indicated.

4. Given 12 pictured sets of objects under which have been written the fractions 1/2, 1/3, 1/4, 1/8, 2/3, 3/4, the learner will, by partitioning or marking as instructed by the teacher, identify the fractional parts indicated for each set.

5. Given the fractions 1/2, 1/3, 1/4, 1/8, 2/3, 3/4, and a number line marked off in halves, thirds, fourths and eighths, the learner will write the fractions on the number line in their proper places.

6. Given 10 addition and subtraction examples of like fractions, the learner will perform the indicated operations and write the results.

7. Given a list of 10 fractions, some of which are proper and some of which are improper, the learner will write P beside the proper fraction and I beside the improper fraction.

8. Given 10 fractions with numerators that are multiples of the denominators, the learner will rename each as a whole number.

9. Given 10 fractions with numerators that are greater than the denominators, the learner will rename each as a mixed number.

10. Given 10 examples of addition and subtraction of two mixed numbers with like denominators, the learner will perform the operation indicated and write the results in simplified form.

11. Given 10 examples of addition and subtraction of a whole number and a mixed number, the learner will perform the operation indicated and write each result in lowest terms.

12. Given 10 proper fractions, the learner will rename each with a larger denominator.

13. Given 10 fractions (proper or improper), the learner will rename each with the lowest possible denominator.

14. Given 10 pairs of positive whole numbers less than 10, the learner will write the least common multiple for each pair.

15. Given 10 pairs of fractions, the learner will write the least common denominator for each pair.

16. Given a list of 10 fractions, the learner will write them in numerical order from the smallest to the largest.

17. Given 10 examples of addition and subtraction of unlike fractions, the learner will perform the operations indicated and write each result in lowest terms.

18. Given 10 examples of addition and subtraction of a whole number and a proper fraction, the learner will perform the operations indicated and write each result in lowest terms.

19. Given 10 examples of addition and subtraction of a proper fraction and a whole number, the learner will perform the operations and write each result in lowest terms.

20. Given 10 examples of addition and subtraction of two mixed numbers with unlike denominators, the learner will perform the operation indicated and write each result in simplified form.

21. Given 10 multiplication examples, consisting of proper fractions and whole numbers, the learner will multiply each pair and write each product in lowest terms.

22. Given 10 multiplication examples, each consisting of a pair of common fractions, the learner will multiply each pair and write each product in lowest terms.

23. Given 10 examples, each consisting of a mixed number times a proper fraction, the learner will perform the indicated operation and write each result in lowest terms.

24. Given 10 examples consisting of mixed numbers multiplied by mixed numbers, the learner will perform the indicated operation and write each result in lowest terms.

25. Given 10 examples of a whole number divided by a fraction, the learner will perform the indicated operation and write each result in lowest terms.

26. Given 10 division examples, each consisting of a proper fraction divided by a whole number, the learner will divide each pair and write each result in lowest terms.

27. Given 10 division examples, each consisting of a pair of common fractions, the learner will divide each pair and write each result in lowest terms.

28. Given 10 examples consisting of a mixed number divided by a proper fraction, the learner will perform the indicated operation and write each result in lowest terms.

29. Given 10 examples, each consisting of a proper fraction divided by a mixed number, the learner will perform the indicated operation and write each result in lowest terms.

30. Given 10 examples, each consisting of a mixed number divided by a mixed number, the learner will perform the indicated operation and write each result in lowest terms.

31. Given 10 (dollar-cents) expressions, such as $2.50, the learner will express orally or in writing, the amount of money as a mixed number in lowest terms.

32. Given 10 oral examples of tenths, and whole numbers and tenths, the learner will write each in decimal notation and read what is written, if asked.

33. Given 10 oral examples of hundredths and whole numbers and hundredths, the learner will write each in decimal notation and read what is written, if asked.

34. Given 10 oral examples consisting of a mixture of tenths, hundredths and thousandths, with and without whole numbers, the learner will write each in decimal notation and read what is written, if asked.

35. Given 10 oral examples consisting of a mixture of tenths, hundredths, thousandths, ten thousandths and hundred thousandths, with and without whole numbers, the learner will write each example in decimal notation and read what is written, if asked.

36. Given a list of 10 decimal fractions, including numbers from tenths through thousandths, the learner will write the numbers in order from smallest to largest.

37. Given a list of 10 decimal notations which contain a mixture of 4, 5 and 6 place decimals, some in combination with a whole number and some without; and beside each of which is written "ten thousandths, hundred thousandths, millionths," the learner will circle after each notation, which of the 3 denominators listed would be used in reading the decimal. The learner will read any of the given decimals orally if asked.

38. Given 10 problems, 5 addition and 5 subtraction, with both addition and subtraction examples containing decimals of varying denominations from tenths to hundred-thousandths, and with the addition examples having from four to seven addends, the learner will write the solution to each.

39. Given 10 problems, 5 multiplication and 5 division, which require that a decimal be divided or multiplied by a whole number, and such that there is a mixture of 3, 4 and 5 place decimals, the learner will write the correct results to each.

40. Given 5 multiplication and 5 division problems of whole numbers divided or multiplied by a decimal, with a mixture of 3, 4 and 5 place decimals, the learner will write the correct results.

41. Given 5 multiplication and 5 division problems which require that a 3, 4 or 5 place decimal be divided or multiplied by 1 or 2 place decimals, the learner will write the correct results to each.

25: MEASUREMENT

1. Given 4 nickels, 2 dimes, and 20 pennies in play money, the learner will match equivalent values of:

   pennies for nickels
   pennies for dimes
   nickels for dimes

2. Given nickels, dimes and pennies in play money in a playstore or similar situations, the learner will pay the correct amount.

3. Given nickels, dimes and pennies, the learner will show equivalents for 25¢ in at least three (3) ways.

4. Given quarters, dimes, nickels and pennies, the learner will show equivalents for 50¢ in at least five (5) ways.

5. Given pennies, nickels, dimes, quarters and half dollars, the learner will show correct amounts for 10 given items priced less than a dollar.

6. Shown 10 models of clocks, with time to the hour, the learner will say the time orally for each.

7. Given the model of a clock, the learner will move the hands to show the time in half hours, as directed.

8. Given the model of a clock with movable hands, the learner will move the hands to show quarter hours, as instructed.

9. Given a work-sheet with 10 clock faces showing time to the hour, half-hour, and quarter hour, the learner will underline the correct time, as directed.

10. Given the model grid of a calendar, the learner will name the days of the week in proper order.

11. Given the model grid of a calendar month and the starting day, the learner will number the days of the month in sequential order.

12. Given a model of a thermometer, the learner will differentiate between hotter and colder by the direction of the mercury.

13. Given pictures indicating seasons and thermometers of varying temperatures, the learner will match the seasons with corresponding temperatures.

14. Given a model thermometer, the learner will show and read the temperature as directed.

15. By comparing the liquid in containers of standard units of measure, the learner will identify 1 cup as 1/2 pint, 2 cups as 1 pint, 2 pints as 1 quart, 2 quarts as 1/2 gallon and 4 quarts as 1 gallon.

16. Given containers of various sizes and shapes, the learner will select a cup, pint, quart, half-gallon and gallon.

17. Given an inch as the unit of measure, the learner will give the measurement of 3 or more objects in inches.

18. Given the foot as the unit of measure, the learner will give the measurement of 3 or more objects in feet.

19. Given 3 objects to measure, the learner will say the measurement using feet and inches.

20. Given 12 objects, the learner will describe the group as a dozen.

21. Given 6 objects, the learner will identify this group as a half dozen.

22. Given 2 objects of different weight, the learner will orally identify the lighter one as weighing *less than*, and the heavier one as weighing *more than*.

23. Given pictures and vocabulary of standard units of measurement, the learner will match the vocabulary with its corresponding pictures.

24. Given 10 amounts of money having values of less than one dollar, and a worksheet divided into columns headed: half dollar, quarter, dime, nickel and penny, the learner will indicate in writing the fewest number of coins needed to make up these amounts of money.

25. Given 10 various amounts of money less than a dollar, the learner will write the greatest number of dimes and remaining pennies under proper columns for each amount.

26. Given 10 pictured clock faces, each showing time at intervals of 5 minutes, the learner will record the time.

27. Given 10 pictured clock faces, each picturing time at intervals of 1 minute, the learner will record the time.

28. Given a calendar month, the learner will say or write the name of the month, the ordinal month of the year, the number of days in the month and any other relevant questions.

29. Given a worksheet showing thermometers of various temperatures, the learner will record the temperature for each.

30. Given a yardstick, the learner will measure the length and width of the room and record to the nearest yard.

31. Given the perimeter of a room to the yard, the learner will translate in writing, the measurements in feet and inches.

32. Given a list of 10 equations of liquid measure with one unknown, the learner will write the unknown.

33. Given a list of items in multiples of 6, the learner will write or say these quantities in terms of dozens/half dozens.

34. Given 10 objects, the learner will weigh the objects and record the weights to the ounce.

35. Given a ruler and 10 squares and rectangles, with measurements indicated on five, the learner will compute the areas of each.

36. Given a list of 10 measurement terms, the learner will underline the measurements of speed.

37. Given a list of 10 commodities, the learner will circle those items on the list which are commonly measured in pecks and/or bushels.

38. Given 10 statements (2 bushels = pecks), the learner will write the number of pecks in the given number of bushels and vice versa.

39. Given 3 five-dollar bills, 8 one-dollar bills, 3 half-dollars, 2 quarters, 1 dime and 1 penny, the learner will say and write the total amount.

40. Given 10 money story problems involving the four basic operations, the learner will write and solve the equation for each.

41. Given 10 time problems to the second, the learner will solve each.

42. Given 10 hourly time statements and a 24 hour clock, the learner will write the equivalent in standard time.

43. Given 10 mixed liquid and dry measurement story problems involving the four basic operations, the learner will solve each.

44. Given 10 story problems involving feet, yards, miles and rods, the learner will complete the problems.

45. Given 10 equations and a table of linear metric measures ranging from kilometer to millimeter, the learner will solve each.

46. Given a list of 10 words, the learner will choose, through multiple choice, the correct definition for each word.

47. Given 10 selected story problems orally, the learner will compute each mentally and say the answer.

48. Given 10 illustrations of solid figures, including cube, rectangular prism, and triangular prism, with the dimensions of each indicated on the given illustrations, the learner will compute the lateral area of each of the illustrated solid figures.

26: **GEOMETRY**

1. Given 10 pictures of triangles, rectangles, squares and circles in two sizes, the learner will match by connecting the shapes which are the same.

2. Given 10 pictures which show the geometric and non-geometric concept of point, the learner will encircle the geometric representation of point.

3. Given 10 pictures of lines and non-lines, the learner will indicate which is the line by placing an X beside the representative example.

4. Given a straight edge and a statement which explains line as an idea, (being straight, going infinitely far in both directions), and a statement which represents a different concept, (size of a lake), the learner will match the correct statement with the correct idea and construct a line.

5. Given a statement which explains line as a set of points, (drawn through points A & B) and another which represents a different concept, (size of a carpet) the learner will match the correct statement with the correct definition and construct a line.

6. Given two endpoints, (A & B) the learner will construct a line segment.

7. Given a straight edge and a set of three and four points not in the same path the learner will construct and label a triangle, a rectangle and a square.

8. Given a set of 10 closed figures, both symmetric and non-symmetric, the learner will draw the lines of symmetry where possible.

9. Given illustrations of a closed, a simple closed and a complex closed figure and a list of names, the learner will match the shape with its name.

10. Given 10 closed figures, the learner will label each convex or concave.

11. Given illustrations of a right triangle, a scalene triangle, an isosceles triangle, and an equilateral triangle, the learner will match the correct name chosen from a list with the correct picture.

12. Given the drawing of any angle less than 180°, the learner will place a capital *I* in the interior of the angle and a capital *E* where the exterior of the angle is formed.

13. Given a straight edge and sets of five and six points, not in the same path, the learner will construct and label a pentagon and a hexagon.

14. Given pictures of a square, a rectangle, a triangle, a pentagon, a hexagon, a circle and a list of names of the figures, the learner will match the figure with its name.

15. Given a pair of intersecting line segments, the learner will label the point of intersection.

16. Given a pair of perpendicular lines, a pair of parallel lines, and a written definition, the learner will match the definition with the right pair of lines.

17. Given a definition and a drawing of two endpoints, the learner will construct a ray.

18. Given three pairs of endpoints, the learner will construct a line, a line segment, and a ray.

19. Given "$\overrightarrow{AB}$" and "$\overrightarrow{AC}$", the learner will construct $\angle BAC$.

20. Given 10 angles with their degree measurements and capital letters naming each angle, the learner will write the names of the angles that are congruent using the three letters naming those angles.

21. Given $\cong$, $\ncong$, ST, $\perp$, $\overrightarrow{ST}$, $\overline{ST}$, $\angle ABC$, m $\overline{AB}$, and m $\angle ABC$, the learner will identify orally and/or in writing, the name of each.

22. Given 10 different angles and a protractor, the learner will measure and record each angle to the nearest degree.

23. Given a right angle, an acute angle and a protractor, the learner will label the right angle.

24. Given a circle with the center point and two points on the circumference marked, the learner will draw two radii to form a central angle.

25. Given two circles with center points and a straight edge, the learner will draw a radius in one and a diameter in the other.

26. Given a circle with a center point, and two points on the circumference, the learner will write the two points which name the arc.

27. Given several fractional parts of a circle, including a half, the learner will underline the drawing which shows the semicircle.

28. Given definitions and non-definitions of a plane, the learner will delete the non-definitions.

29. Given 2 planes which intersect, the learner will label the line of intersection with two capital letters.

30. Given a compass and a straght-edge, the learner will construct the following geometric constructions:

    a. Given $\overline{AB}$, the learner will construct $\overline{CD} \cong \overline{AB}$.

    b. Given $\angle ABC$, the learner will construct $\angle DEF \cong \angle ABC$.

c. Given $\overline{AB}$, the learner will construct a line $\perp$ to $\overleftrightarrow{AB}$.

d. Given $\overleftrightarrow{AB}$, the learner will construct another line parallel to AB.

e. Given $\overline{AB}$, the learner will bisect the line segment and label the point of intersection.

f. Given $\angle ABC$, the learner will bisect the angle.

g. Given $\overline{CD}$, the learner will construct an equilateral triangle having $\overline{CD}$ as one of its sides.

h. Given $\overline{AB}$, the learner will construct an isosceles triangle with base AB.

i. Given $\overline{PR}$, the learner will construct a scalene triangle with base PR.

j. Given $\overline{AB}$ and $\overline{XY}$, the learner will construct a square, with AB as one of its sides, and a rectangle with $\overline{XY}$ as one of its sides.

31. Given a compass and 4 points, equally distant from a center point, the learner will construct a circle.

32. Given illustrations of a rectulangular prism, a triangular prism and a cylindrical prism and a list of names for each shape, the learner will match each drawing with its correct name.

33. Given 10 objects or drawings, 5 cones and 5 pyramids, the learner will group the cone objects in one group and the pyramid objects in a second group.

34. Given any object which has the shape of a sphere and which has been cut into halves, the learner will separate the sphere into two equal parts and point to the spot which represents the approximate center of the sphere.

35. Given the illustrations of a cube which has none of its points labeled, the learner must use a sequence of 8 capital letters and place them on the cube at each vortex so that all of the vertices are labeled.

36. Given the illustration of a cube which has its vertices labeled with capital letters, the learner will label the faces and the vertices.

37. Given a globe on which lines of latitude and longitude are marked, the learner will point to the equator and to all of the lines of longitude and call them great circles; and will point to all the lines of latitude except the equator and call them small circles.

38. Given a sphere divided into 2 equal parts, a sphere divided into 3 equal parts and a sphere divided into 4 equal parts, the learner will label the 2 hemispheres.

39. Given a relief globe, the learner will tell the location of 3 cities by writing the latitude north or south of the equator and the longitude east or west of Greenwich.

27: LOGIC

1. Given 10 conditional sentences, the learner will say or write in the correct conclusion to each.

2. Given 10 sentences, 5 atomic and 5 molecular, the learner will write A after each atomic sentence and M after each molecular sentence.

3. Given 10 atomic sentences, the learner will write the denial of each.

4. Given 10 molecular sentences, the learner will indicate whether it is a conjunction or disjunction by writing a C or D after each one.

5. Given 10 molecular sentences using the connective "or", the learner will say or write the correct conclusiong to each.

6. Given 10 conjunctions using the connective "and", the learner will say or write the correct conclusion to each.

7. Given 10 conditional sentences and the denial of the consequent of those sentences, the learner will say or write a conclusion for each.

8. Given 10 pairs of premises, the learner will use the Rule of Adjunction and write 2 conclusions for each pair.

28: NUMERATION SYSTEMS

1. Given the Roman numerals I-XII, the learner will write the corresponding Hindu-Arabic numerals for same.

2. Given a clock dial with Roman numerals and the time indicated to the hour, the learner will say or write the time.

3. Given the Roman numerals I, V, X, L, C, D, M, the learner will say or write the corresponding Hindu-Arabic numerals.

4. Given 10 addition problems with 2 addends containing thousands, the learner will compute the sums using Roman numerals.

5. Given 10 subtraction problems containing thousands, the learner will compute the difference using Roman numerals.

6. Given the Egyptian numerals , , , the learner will state or write the corresponding Hindu-Arabic numerals for same.

7. Given 10 Egyptian numerals, including thousands, the learner will write the corresponding Hindu-Arabic numerals for each.

8. Given 10 Hindu-Arabic numerals, including thousands, the learner will write the corresponding Egyptian numeral for each.

9. Given the Hindu-Arabic, Roman and Egyptian symbols, the learner will write the current year.

10. Given 10 addition problems containing 2 addends (sum to thousands), the learner will compute the sums using Egyptian numerals.

11. Given 10 subtraction problems (numbers to thousands), the learner will compute the differences using Egyptian numerals.

12. Given a 5x5 grid, the learner will fill in the squares with a number chart through twenty-five in base five.

13. Given a 7x7 grid, the learner will write in all the addends and sums necessary to complete a base five addition chart through five plus five.

14. Given 10 addition problems in base five, and the addition chart, the learner will add two 2-place addends with regrouping to the fives place.

15. Given the base five addition chart and 10 two-place subtraction problems (requiring regrouping) from the fives column, the learner will write the differences to each.

16. Given a grid, the learner will write his own system of numeration.

29: INTEGERS

1. Given a number line with units designated, the learner will label all points corresponding to 20 through 20.

2. Given 10 labeled number lines, each showing addition of a one-digit negative number and a one-digit positive number, the learner will write an addition equation for each number line.

3. Given 10 labeled number lines, each showing addition of a negative one-digit addend, the learner will write an addition equation for each number line.

4. Given 10 equations involving addition of negative numbers, the learner will construct a number line for each equation.

5. Given 10 integers, the learner will write the additive inverse for each number.

6. Given 10 labeled number lines, each showing subtraction of a one-digit negative number and a one-digit positive number, the learner will write a subtraction equation for each number line.

7. Given 10 labeled number lines, each showing subtraction of 2 negative numbers, the learner will write a subtraction equation for each number line.

8. Given 10 multiplication problems, a two-digit factor times a one-digit factor, with like or unlike signs, the learner will solve the problems correctly.

9. Given 10 division problems, a two-digit product divided by a one-digit factor, with like or unlike signs, the learner will solve the problems correctly.

10. Given 10 incomplete number patterns, such as $-11 < n < 11$, the learner will complete each pattern.

30: GRAPHS

1. Given a completed weather picture graph and 5 simple questions about the graph, the learner will answer each orally.

2. Given a pictured chart and 5 questions relating to the chart, the learner will answer orally or in writing, all of the questions.

3. Given a simple bar graph and 5 questions relating to the graph, the learner will answer orally or in writing, each question.

4. Given a line graph and 5 questions about the graph, the learner will use the information to construct a picture graph.

5. Given the raw data and stickers for a picture graph, the learner will use the information to construct a picture graph.

6. Given specific information and a grid in pre-designated units, the learner will shade in, in bar form, the information which was given.

7. Given the raw data for a graph of 2 to 6 bars, the learner will construct a bar graph to illustrate the given data.

8. Given the raw data for a line graph of 2 to 4 lines, the learner will construct a line graph to illustrate the given data.

9. Given a circle graph and 15 true and false statements, the learner will underline those which are true.

10. Given a graph with pre-designated points, the learner will say or write the coordinates.

11. Given a circle graph, the learner will write 10 true statements about the graph.

12. Given 10 coordinates and a grid, the learner will chart a line graph.

13. Given graph paper and 10 sets of sentences (some with solution and some without solution) with 2 variables (x=y; y=6 x), the learner will graph the sentences and give the solutions where possible.

14. Given a divided bar graph and 10 questions based on the graph, the learner will say/write the answers to the questions correctly.

15. Given percentages of a total and graph paper, the learner will accurately construct a divided bar graph to illustrate the given data.

31: **PROBABILITY**

1. Given a coin, the learner will say or write the probability of obtaining heads with one flip.

2. Given two coins, the learner will say or write the set of possible outcomes of heads and/or tails when the coins are flipped once.

3. Given a two-color symmetric spinner, the learner will write the set of possible outcomes based on two spins.

4. Given five variously divided symmetrical spinners, the learner will say or write the probability of the spinner stopping on any given segment.

5. Given a set of five non-symmetric multi-colored spinners, the learner will say or write the probability of the spinner stopping at any given segment.

6. Given a three-color symmetric spinner, the learner will say or write the set of all possible outcomes when two spins are taken.

7. Given a three-color non-symmetric spinner and two subsets of the set of possible outcomes, the learner will say or write the probability of the event of both the intersection of the two subsets and the union of the two subsets.

PART FOUR: DIAGNOSTIC AND PRESCRIPTIVE PROCESSES

SECTION I: DIAGNOSIS IN THE NEC PROJECT

The diagnostic process in the NEC Project is primarily directed to the identification and interpretation of the pupil's instructional needs as such relate to the listing of math and language behavioral objectives. Diagnostic information indicates the point at which instruction should begin for each pupil in the acquisition of specific skills in math and language. Diagnostic information may provide answers to the following questions:

1. What can the pupil do?
2. What are the pupil's difficulties?
3. What are some possible remedies to the pupil's difficulties?

Diagnosis provides an assessment of difficulties encountered by pupils in the acquisition of skills associated with one or more of the behavioral objectives in math and language. It provides teachers with information about the level of attainment or non-attainment of those skills which are either pre-requisite or co-requisite to the pupil's acquisition of a more complex skill or skills. Diagnosis is a continuing process. The immediate feedback gleaned from diagnostic information provides the rationale for the grouping of pupils, the application of specific learning experiences, and the determination of appropriate instructional procedures. When a pupil is unable to master one or more of the skills associated with a specific behavioral objective, diagnosis provides critical information about pre-requisite or co-requisite skills which have not been mastered. This process is illustrated in the following examples:

EXAMPLE A:

Step 1. Objective (briefly stated): Addition of pairs of two or three digit number (no regrouping).

*	***	*	***	*
423	355	147	556	133
513	123	432	121	234
836x	469x	569x	786x	366x

QUESTION: What can the pupil do? In this example, the child added facts through 3 correctly.

Step 2. QUESTION: What are the pupil's difficulties? In the example, the pupil did not respond correctly. He cannot perform this skill. Closer examination indicates that the task involves mastery of pre-requisite skill of knowing the arithmetic facts through 9. More analysis shows that the problem is in the "4" through "9" facts (marked*).

Step 3. QUESTION: What are some possible remedies to the child's difficulties?

a. Instructional emphasis is directed to fit the "4" through "9" facts.
b. Child pursues his individualized work.

Step 4. The Objective Referenced Test is repeated and now can become a mastery tool as well. If the child performs successfully, he goes on to the next skill; if not, the cycle is repeated and includes task analysis of his skill again. He may now know the "4" facts, and still not know the "5" through "9" facts. A new instructional sequence might be needed.

EXAMPLE B:

Step 1. Objective (briefly stated: Given a list of words which require the dropping of the final *e*, the doubling of the final consonant, or no change before adding *ing*, the learner will correctly write the *ing* form for these words:

1. skip	1. skiping*
2. write	2. writing
3. run	3. runing*
4. see	4. seeing
5. move	5. moving
6. jump	6. jumping
7. close	7. closing
8. swim	8. swiming*
9. bite	9. biting
10. hit	10. hiting*

QUESTION: What can the pupil do? Examination of the test shows that the child is aware of the rule to drop the final *e* and add *ing;* the child also knows the rule when there is no change before adding *ing.*

Step 2. QUESTION: What are the pupil's difficulties? In the example above, the child has not gained the skill or knowledge to know when to double the final consonant in adding *ing* (marked*).

Step 3. QUESTION: What are some possible remedies to the child's difficulties?

a. Instructional emphasis is directed toward mastering the skill of doubling the final consonant in adding *ing.*

b. Child pursues his individualized work.

Step 4. The Objective Referenced Test is repeated. Again, if the child performs successfully, he goes on to the next skill. If he does not perform successfully, then more concentration is needed in the areas in which he is deficient. A new instructional sequence may be needed.

Diagnostic Instruments

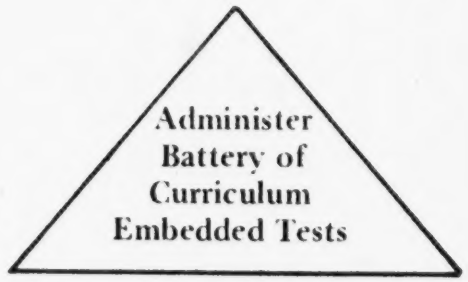
An effective diagnostic process in the NEC Project requires the structuring of diagnostic instruments designed specifically for the project's listing of math and language behavioral objectives. Diagnostic instruments designed to provide accurate interpretation of not only the pupil's mastery or lack of mastery of skills associated with the project's listing of behavioral objectives, but also an analysis of the pupil's difficulties, have been developed. The development of diagnostic instruments will be continued until appropriate instruments are developed to embrace all behavioral objectives for which diagnostic information is desired. Such instruments are critical to the teacher's accurate determination of appropriate entry levels for pupils on the continuum of sequentially ordered objectives for math and language.

The diagnostic instruments developed for use in the NEC Project are of two kinds: The Curriculum Embedded Test (CET) and the Objective Referenced Test (ORT). Curriculum Embedded Tests are instruments designed to measure pupil performance on a set of behavioral objectives which present sequentially ordered skills. Objective Referenced Tests are designed to measure the pupil's level of attainment of those skills represented in a single behavioral objective.

The CET is used to ascertain appropriate entry levels for pupils on the continuum of sequentially ordered behavioral objectives in math and language and to measure the level of pupil mastery of a set of behavioral objectives. East test item included in the CET is designed to provide information about a specific behavioral objective. The pupil's performance on a CET indicates those areas in which he has

or has not mastered the skills associated with one or more behavioral objectives. The teacher has the responsibility to analyze the data gleaned from the pupil's performance on the CET.

In September, each pupil will be given CETs in math and language appropriate for him as determined by the data available for the pupil. This first administration of CETs is for placement purposes. There will be subsequent required administrations of appropriate CETs for each pupil in January and in June for purposes of determination of mastery levels.



Analyze, Record
and
Report Results

Less than
Mastery

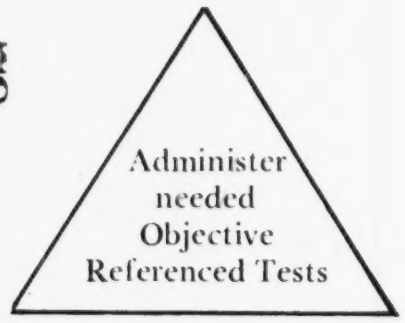
Mastery

Refer
to C.S.C.

Analyze and Interpret
other Relevant Data

Analyze, Record
and
Report Results

Less than
Mastery

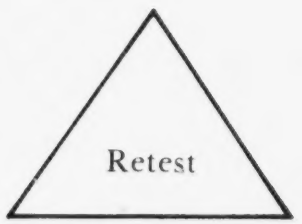


Analyze, Record
and
Report Results

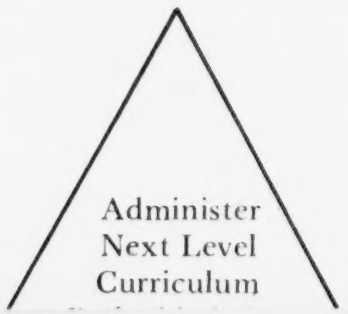
Analyze and Interpret
other Relevant Data

Select
Appropriate
Instructional
Steps

Pupil
Activity



Mastery



In addition to the required use of CETs, individual pupils may be given ORTs which measure mastery of sets of objectives in language and math as the child completes those objectives measured by CET. Decisions concerning additional administration of CETs will be made by the Curricular Assistant Principal (CAP) and the teacher. These decisions will be based upon data previously obtained from the use of the Objective Referenced Tests.

The Objective Referenced Test is an instrument for measuring the pupil's level of attainment of skills represented by a single behavioral objective in language or math. The ORT is the parent instrument from which the CETs are constructed. The failure of a pupil to complete correctly an item on the CET indicates necessity for further diagnosis with that ORT designed for that specific objective. Initial use of the ORT, as indicated by CET performance, yields information about the pupil's skill difficulty with behavioral objectives. Analysis of pupil performance indentifies the scope of non-mastery and indicates specific instructional needs. The ORT is a two-fold instrument. It can be used to indicate areas of mastery as well as areas of non-mastery. These data are transmitted to the American Institutes of Research (AIR) and are used to aid the CAP and the teacher in determining each child's readiness for additional CET testing.

General Steps in Diagnosis in the NEC Project

1. The teacher will administer the Curriculum Embedded Test (CET) for the purpose of assessing the pupil's strengths and weaknesses in a set of closely related behavioral objectives in language and mathematics.

2. The teacher will analyze, record, and report CET results.

3. If the pupil demonstrates mastery on the CET, the teacher will administer the next CET on the continuum.

4. If the child does not master the CET, the teacher will administer Objective Referenced Tests (ORT) for those sections in which the child exhibited skill deficiencies. Each ORT deals with one specific behavioral objective.

5. The teacher will analyze, record, and report ORT results.

6. The teacher will analyze and interpret other relevant data. This is done for the purpose of ascertaining:

   a. how and under what conditions the pupil learns best.
   b. if the pupil has any physical disabilities (especially auditory and visual perception).
   c. the pupil's interest.

7. The teacher will select sequences within the prescriptions to correct weaknesses as identified by the ORT.

8. The teacher will involve the pupil in activities with materials geared to specific behavioral objectives.

9. The teacher will retest, using alternate forms of the ORTs. If mastery is attained, the pupil proceeds to the next CET on the continuum.

10. If performance on the ORTs is less than mastery, the teacher will resequence or consult with the CAP about the possibility of referral to C.S.C. for more indepth diagnosis after:

    a. analyzing, recording and reporting ORT results;
    b. analyzing and interpreting other relevant data in reference to retest results.

Record-Keeping for Diagnosis

Diagnosis, to be effective, depends on accurate record-keeping. The following devices have been developed to assist the teacher in recording diagnostic information:

a. CET Battery Checklist
b. Individual CET Checklist
c. Individual ORT Profile

The initial use of the CET Battery Checklist is mandatory. The checklist, and the Individual CET Checklist, is used to assist the teacher in indentifying areas for additional diagnostic testing with the ORT. Areas of non-mastery can be clearly indicated on these checklists. This enables the teacher and the CAP to identify needed tests for each pupil.

The Individual ORT Profile is to be used to identify pupil mastery on the Behavioral Objectives. This information may also be used to indicate additional CET testing. The Individual ORT Profile may also be given to the child, in order that he might participate in the process of self-evaluation in the mastery of the behavioral objectives in language and math.

Once AIR's computerized data program is in operation, the use of the above forms becomes optional. These computerized data consist of:

a. Individual Pupil Profile, showing each objective the child has mastered.

b. Individual Pupil Profile, showing scores on each CET taken by the child.

c. Cluster Profile, showing a frequency distribution on mastery for each objective in all language and math skill categories.

d. Cluster Profile, for a single language or math skill category, indicating the overall status of each pupil in the cluster.

The computerization of test data promises to relieve the teacher of much of the diagnostic record-keeping. However, computerized data are only as accurate as the in-put sent through the computer. It is the responsibility of each teacher to provide accurate, up-to-date, information on all diagnostic and mastery instruments.

CET BATTERY CHECKLIST

Cluster: A:26

Item No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Obj. No.	1	2	3	3	4	5	6	6	7	8	9	9	10	11	11	12	13	13	14	14	14	15	15	16	16
PUPIL NAME																									

INDIVIDUAL CET CHECKLIST

NAME _____

CATEGORY:	CODE	A	B	C	D	E	F	G	H	I	J	K	L	M
OL	01													
WL	02													
AVP	03													
PA	04													
SA	05													
COMP	06													
LU	07													
D	08													
GM	09													
G	10													
TCI	11													
CC	12													
E	13													
RM	14													
URM	15													
PN	20													
RWC	21													
AS	22													
MD	23													
FR	24													
MEAS	25													
GEOM	26													
L	27													
NS	28													
I	29													
G	30													
P	31													

INDIVIDUAL ORT PROFILE

NAME _____ I.D. _____

Lang. ☐ Math. ☐

Date ORT. NO.	
100%	
90%	
80%	
70%	
60%	
50%	
40%	
30%	
20%	
10%	

MODEL

INDIVIDUAL PUPIL PROFILE ORT

SCHOOL 3 CLUSTER 4 ID 3000796 DATE 11-15-70

		OBJECTIVE NO.																							
CATEGORY		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
OL	01	x	x	x	x	x	x	x	x	x	x	x	x												
WL	02	x	x	x	x	x		x	x		x														
AVP	03	x	x	x	x	x	x			x	x	x													
PA	04	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x						
SA	05	x	x	x	x																				
C	06	x	x	x	x	x	x																		
LU	07	x	x	x	x	x	x	x	x																
D	08	x	x	x	x	x	x	x	x	x	x														
GM	09	x	x	x																					
G	10	x	x	x	x																				
TCI	11	x	x	x																					
CC	12	x	x	x	x	x	x																		
F	13	x	x			x																			
RM	14	x	x			x	x	x																	
URM	15	x	x	x	x																				

A

MODEL
INDIVIDUAL PUPIL PROFILE
CET

SCHOOL 3 CLUSTER 4 ID 3000796 DATE 11-15-70

TEST

CATEGORY		A	B	C	D	E	F	G	H
OL	01	95	60						
WL	02	90	55						
AVP	03	90	65						
PA	04	95	45						
SA	05	45							
C	06	30							
LU	07	55							
D	08	65							
GM	09	40							
G	10	50							
TCI	11	85							
CC	12	90	45						
F	13	90	65						
RM	14	65							
URM	15	75							

B

MODEL
CLUSTER PROFILE MD923

SCHOOL 3 CLUSTER 4 DATE 11-15-70

OBJECTIVE	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
PUPIL																							
3000775	X	X	X																				
3000776	X	X	X	X	X	X	X																
3000777	X	X	X																				
3000796	X	X	X	X	X	X	X	X	X	X	X												
3000797	X	X	X																				
3000802	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
3000815	X	X	X	X	X	X																	
3000820	X	X	X	X	X	X	X	X	X														
3000831	X	X	X	X																			
3000897	X	X	X	X	X			X															
3000917	X	X	X	X					X														
3000951	X	X	X	X	X	X																	
3000963	X	X			X																		
3000972	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
3001037	X	X	X	X	X	X																	
3001139	X	X				X	X																
3001179	X	X	X	X	X	X																	
3001214	X	X	X																				
3001413	X	X	X	X	X	X	X	X	X	X	X												

87 78

C

MODEL
CLUSTER PROFILE

SCHOOL 3 CLUSTER 4 DATE 11-15-70

OBJECTIVE		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CATEGORY		*FREQUENCIES*																						
PN	20	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66
RWC	21	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66
AS	22	66	66	66	66	66	66	66	66	66	50	51	50	47	40	39	20	10						
MD	23	66	66	50	40	39	39	20	3															
FR	24	66	66																					
M	25	66	66	50	31	19	2																	
GE	26	10	9																					
L	27																							
NS	28	20	17	3																				
I	29																							
G	30																							
P	31																							

D

Roles In Diagnosis

The diagnostic process is an essential component in the individualization of instruction. It is a central link in the chain that binds school personnel to the total progress of each child. The teacher and the CAP share responsibility for and jointly contribute to the success of the diagnostic process.

The CAP, as the supervisor of the overall testing program, will train teachers in the mechanics of testing and assist in the diagnosis of new pupils. It is the role of the CAP to refer selected pupils to the proper sources (CSC, Home Curriculum Specialist, School Social Worker), and then to aid in the interpretation of referral findings to the cluster. Through the co-ordination of teacher findings, additional information resulting from any referrals, the CAP will establish a clear and detailed blueprint of each child and each cluster. In addition, the CAP will serve as the distribution agent of the CETs and the ORTs to teachers as needed, and will send necessary data to AIR.

The teacher, in her role as a daily diagnostician, will administer the CETs in September, carry out an on-going diagnostic-mastery program, and administer subsequent CETs as needed. Through careful observation of each pupil's performance and his integration into the life of the cluster, the teacher will make decisions concerning his particular readiness for ensuing levels of learning. The teacher will also make recommendations on pupils who need a more complete diagnostic investigation. In order to keep individual and cluster information accurate and up-to-date, the teacher will systematically and carefully record and submit to the CAP the required data.

It is hoped that, by record-keeping devices maintained by the pupil, and through his constant interaction with the teacher, the pupil will develop a positive attitude toward test-taking and the assurance that he is in competition with himself alone.

Communication Skills Center

The Communication Skills Center has an important role in the diagnostic process. The primary goal of the CSC is to significantly reduce reading retardation among those pupils serviced by the CSC. To implement this goal, CSC is administered by a Reading Diagnostician who directs the services provided by six teachers who are Reading Specialists, and whose services are supplemented by the efforts of a Social Therapist and a Psychologist. Additional professional support is provided through the part-time utilization of a neurologist, a pediatrician, and an ophthalmologist.

The following is a summary of the Communication Skills Center's provision of services to the NEC Project:

Diagnostic Services:

1. For diagnostic services, the CSC shall receive pupils from all clusters with the exception of those pupils placed in special education classrooms.

2. The CSC shall provide a more extensive program of diagnostic services for those pupils who are referred to the center by a principal. The number and source of pupils to receive such extensive diagnostic services shall be determined by the administrator of the center in consultation with the NEC Project Administrator.

Tutorial Services:

1. The administrator of the CSC shall select those pupils for tutorial assistance in grades 1-5 who are identified as the most in need of tutorial assistance from the CSC.

2. Specific quotas from each of the four elementary schools sending pupils to the CSC shall not be established. Pupils admitted to the CSC's tutorial program shall be selected on the basis of the degree of severity associated with the problem of reading retardation.

3. The administrator of the CSC shall establish a priority listing of those pupils who are in the most critical need of tutorial assistance from the CSC.

4. Those pupils identified as in need of tutorial assistance, but who require specialized help not provided by the CSC in order to profit from tutorial assistance at the CSC, shall be referred to appropriate agencies for assistance.

5. The NEC Project Administrator, upon consultation with the administrator of CSC and principals, shall establish appropriate adjustments in the number and source of pupils being received by the CSC for tutorial assistance.

In the provision of its diagnostic and tutorial assistance of the pupils and school personnel in the NEC Project, the CSC will give special emphasis to reading difficulties of those pupils in the primary units. This emphasis is established in an effort to identify early reading difficulties and to develop prescriptive approaches capable of terminating or reducing the severity of such difficulties.

American Institutes for Research

The American Institutes for Research, as the contracted evaluation agency for the NEC Project, is a full partner in the diagnostic process. AIR has the responsibility for providing the CET diagnostic-mastery tests to the project. These tests are structured after prototype tests which have been suggested by the diagnostic committee members. Also among the responsibilities of AIR in the diagnostic process is the periodical provision of computerized data to the project personnel. These data give teachers and administrators an accurate accounting of mastery levels on the behavioral objectives. If the results of diagnostic and mastery tests indicate that problems exist in clusters, AIR staff members will bring this type of information to the attention of the NEC Project Administrator.

SECTION II: PRESCRIPTIONS

A prescription is a series of sequential steps of learning experiences logically planned to achieve an objective. Such learning experiences are arranged in order from simple to complex. Each subsequent learning step is built on the foundation of the learning in the preceding step. The prescriptive process should include:

A. diagnosing by presenting the objective,
B. analyzing the objective to determine the tasks which the learner must perform,
C. writing a learning sequence to accomplish the tasks.

The following criteria should be used when writing a learning sequence:

1. Given a model, the learner imitates the model. (A model is any example for imitation.)
2. The learner gives the same or correct response to a different stimulus or cue.
3. The learner practices the skill independently.
4. Given a collection of all the stimuli, the learner responds correctly, one at a time, to each without aid.
5. The learner classifies or makes a generalization about the stimuli. (That is, the learner develops a rule that helps him transfer learning to a similar or new situation.)

An objective may or may not require all five steps in a learning sequence. Many objectives may be achieved at the completion of Steps 3 and 4. Steps 3 and 4 may be combined depending upon the number of single tasks involved in the performance of the whole objective. Sequencing should terminate when the objective is reached. If a step is unnecessary for completion of the task it should be omitted. No time limit can be set for any step of the sequence. The learner will remain on any step as long as it is necessary for mastery of it. If he can not successfully perform the task at any step, he will be recycled through the preceding step or steps.

A sample prescription from each category of the Behavioral Objectives is attached.

Given a prescription, the teacher must design a lesson plan that corresponds to each step in the prescription. This lesson plan must include the instructional steps necessary to accomplish each step in the prescription. In some cases a step of the prescription may require two or more steps in a lesson plan. In other cases the prescription may be simple enough to be used as the lesson plan with only the addition of materials.

The instructional steps of the lesson plan should clearly state what the teacher does and what the learner's response is expected to be. In this plan the instructional materials should be listed and an evaluation made of the teacher's and learner's performance.

Each learner will proceed through the steps of the lesson plan at his own rate of speed. The learner's accomplishment of each step determines his rate of progress. It is possible that a learner may begin at some point other than the initial step of the sequence. Each individual works on the steps he needs. A teacher may have one or more learners on any step at the same time. A lesson plan does not in itself provide a complete description of the management of instruction.

PRESCRIPTION

CATEGORY: Comprehension

PREREQUISITE OBJECTIVES: dict. #11, comp. #24, 25

BEHAVIORAL OBJECTIVE NO. 06:26, PAGE 19:

Given three short paragraphs, the learner will label each paragraph either fact or opinion and give supportive reasons.

LEARNING SEQUENCE	INSTRUCTIONAL MATERIALS
1. Given 6 simple sentences, 3 of which are fact and 3 of which are opinion, the learner will, with teacher assistance, label those sentences which are fact and those which are opinion. With assistance, the learner will define "fact" and "opinion." (e.g. We eat food . . . fact; All food tastes good . . . opinion)	Teacher-constructed materials and/or activity books with related materials.
2. Given 6 simple sentences structured as above, the learner will label each as fact or opinion, using his dictionary definitions of fact and opinion to support his decisions.	(see above dictionaries)
3. Given several paragraphs to read, the learner will tell or write at least one fact from the paragraphs and tell or write his opinions of the paragraphs giving supportinve reasons for his opinions.	Teacher made hectographs and/or paragraphs with factual information.
4. Given selected paragraphs or a story to read, the learner will write or tell at least 3 facts taken from the selections, and write or tell at least three opinions stated in the material.	Basic reading texts, stories, biographies, etc.
5. Guide learner to generalize that: A fact is an actual happening or existence, can be proved and an opinion is a strong belief.	

PRESCRIPTION

CATEGORY: Addition and Subtraction

PREREQUISITE OBJECTIVES: 21:28

BEHAVIORAL OBJECTIVE NO. 22:17

PAGE 6 :

Objective: Given a set of 10 addition problems, each with 3 or more one digit addends, the learner will solve each.

LEARNING SEQUENCE	INSTRUCTIONAL MATERIALS
1. Given an addition problem with three or more addends, the learner will write the problem.	Flashcards with 3 or more addends
2. Given a different problem with three or more addends and a number line, the learner will compute the sum.	Number line
3. Given flashcards with 3 or more addends, the learner will orally say the sum . . . or The learner will use the Add-o game and compute the sums on the cards.	Add-o (grease pencils) Game
4. Given a worksheet with 5 problems with 3 or more addends, the learner will solve the problems. (Owens Pub., 2/24 or 3/5, 10)	
5. Given a set of 10 addition problems, each with 3 or more one digit addends, the learner will solve each.	

PART FIVE: CONTENT, ORGANIZATION, & ROLE DEFINITION

SECTION I: CONTENT

The content of an educational program is based upon the total experiences, both educational and social, in which the pupil is involved. These experiences culminate in the acquisition of broad academic and social concepts. The experiences which involve the pupil in the school cannot be isolated from those which involve him in the community. Since the school environment is more amenable to change, it is imperative that those activities which are planned for pupils in school be relevant to the activities of the total community. All experiences must be planned to enhance the growth and development of the individual pupil. Content must emphasize the worth of the individual and his absolute need to have to opportunity to become a fully functioning member of society. *Opportunity* implies that two way communication exists between adults and pupils and pupil participation is essential to pupil growth.

A. Content will stress the growth of the individual.

1. Academic development is directed to the attainment of those prerequisite skills necessary for the individual to become self-directed and fully functioning.

2. Social development is the process which leads an individual to become a fully participating member of society.

   a. Develop his own dignity and worth.

   b. Realize that human rights are more important than material rights.

   c. Recognize the need for active participation in society in order to make society responsive to the total needs of the individual.

   d. Make responsible decisions or alter decisions based on situations, evidence, and circumstances.

B. Certain essential conditions for learning must be incorporated in the planning of instruction.

1. The program should provide for the self-motivation of learning.

2. Instruction should provide children with an understanding of what they are trying to learn and its relations to the larger goals of their education.

3. Opportunity to practice must be provided.

4. There should be rewards and reinforcement for pupil effort.

5. Provisions must be made for the learner to get feedback from evaluation. He needs to know if he is doing well. He needs to have guidance to avoid repeating mistakes.

6. Children need to be able to see what they have learned is useful outside the classroom.

C. Materials should be relevant to the child's needs.

1. Provide many and varied experiences in a variety of media.

2. Provide for self-motivation of learning.

3. Give reward and reinforcement for successful learning.

4. Provide for practicing the desired learning.

5. Facilitate the attainment of behavioral objectives.

6. Meet local and state criteria.

    a. Be factually correct.

    b. Realistically represent all racial and ethnic groups.

    c. Serve the purpose for which it is intended.

    d. Be current.

    e. Be attractive.

SECTION II: ORGANIZATION

The cluster is considered the chief organizational vehicle for facilitating the individualization of instruction within the NEC Project. All other operational features and the various instructional and administrative personnel function to provide direct support to the cluster. Thus, the statements related to the organization of instruction are presented in their relationship to the cluster.

A. CLUSTER CONCEPT

1. CLUSTER DEFINED: A cluster is an organizational unit for instruction composed of teachers and pupils in which the responsibility for providing instruction is jointly shared by the members of the teaching team. The cluster is also a social unit in which discussion of variant points of view is encouraged and respected.

   A cluster in the NEC Project is generally structured with four teachers assigned to sixty-six pupils housed in three classrooms. The students in each of the classes within the cluster are grouped heterogeneously. However, because the groups of pupils within each grade level may not be composed of units of sixty-six pupils, a cluster may vary in size and composition.

2. OPERATIONAL ASPECTS OF THE CLUSTER: The following are those special aspects of the methodological rationale for teachers within the cluster:

   a. Learning experiences for each pupil are developed as a result of diagnostic information.

   b. Teachers in the clusters establish an ongoing evaluative process to assess pupil growth and development.

   c. Sufficient instructional materials are available and are used by teachers to implement the individualization of instruction.

   d. Pupil records with relevant personal information, performance needs, and attainments are maintained.

   e. Teachers assigned to the cluster jointly plan and evaluate the learning experiences for those pupils assigned to the cluster.

   f. Within the cluster, pupils are interchangeably grouped because of their needs for similar individualized learning experiences.

   g. The teaching schedule provides for the teachers in the cluster to meet as a group twice a week for purposes of group planning and evaluation. At least one of these meetings shall be with the curricular assistant principal.

   h. Each teacher assigned to the cluster has instructional contacts with pupils other than those assigned to his specific classroom.

   i. Pupils are heterogeneously grouped into each of the classrooms in the cluster.

   j. Objectives for pupils are behaviorally stated.

3. GROUPING OF PUPILS WITHIN A CLUSTER: Classrooms within a cluster shall be heterogeneously grouped. The Stanford Achievement Test (arithmetic and paragraph meaning) shall serve as the basis for grouping pupils among clusters.

4. USE OF TEACHER SERVICE ASSIGNED TO A CLUSTER: The commitment on the part of all teachers in the four elementary schools in the NEC Project is to maximize the opportunities that pupils have to participate in effective individualized learning activities. Each cluster is provided with direct teacher service beyond that which would be established by the assignment of one teacher per classroom. The additional teacher service provided directly to each cluster is considered an integral instructional component of the cluster. The number of teachers assigned to a cluster for the provision of this additional teacher service will vary in accordance with the number of classrooms attached to a cluster.

5. INSTRUCTIONAL RESPONSIBILITIES OF TEACHERS IN CLUSTERS: The cluster is viewed as a self-contained instructional unit. Teachers in a cluster are responsible for all language arts and mathematics instruction plus all other instruction not specifically provided by non-cluster teachers.

6. PLANNING TIME FOR CLUSTER TEACHERS: Each teacher assigned to a cluster is allotted 120 minutes per week for preparation time, and the cluster is allotted 80 minutes per week for cluster planning. Cluster planning and preparation time per week shall not exceed 200 minutes.

B. SPECIALISTS

1. SPECIALISTS DEFINED: Specialists in the NEC Project are those teachers who provide classroom instruction outside of the cluster unit. Specialists are usually selected from the following disciplines:

   a. Art
   b. Health and Physical Education
   c. Music
   d. Performing Arts
   e. Science

2. UTILIZATION OF SPECIALISTS: Specialists are assigned to each school on the basis of the authorized teacher service. It is not the intent to use specialists to insure that the minimum time alloted to each specialist's subject area be met by the particular specialist. The specialists are to supplement the instructional program of a cluster, but they are not assigned necessarily to provide the total time allotment prescribed for the various disciplines. With the exception of science, no specialist is to exceed 100 minutes instructional time per week with any class.

3. PREPARATION TIME: Specialists operating outside of the cluster are to receive three (3) preparation periods per week. Additional planning time for specialists shall be provided. The three (3) preparation periods and the additional planning time shall not exceed either 150 or 160 minutes. The length of the scheduling period in each school shall determine the amount of maximum planning time to be allotted to specialists.

4. CLASS SIZE FOR SPECIALISTS: Specialists operating outside of the cluster unit can expect a pupil-teacher ratio of 22-1 only when the authorized teacher service to a school permits such a ratio. When the pupil-teacher ratio of 22-1 cannot be met for specialists, the pupil-teacher ratio shall not exceed the maximum ratio established in the teacher contract. Budget and organizational considerations shall be the determining factors in establishing the pupil-teacher ratio for specialists.

5. INDIVIDUALIZATION OF INSTRUCTION: When the instructional time that a specialist provides to a cluster or to a particular class within a cluster reaches the point of two instructional periods per week, the instructional time of the specialist shall then be devoted to providing individualized instructional experiences for pupils in language arts or math. (The

exception to this rule would be the science teacher who shall be permitted when feasible to provide the prescribed allotment of time in science).

6. CORRELATION OF ACTIVITIES: To maximize the curricular thrust of the NEC program, Specialists will coordinate their activities with the cluster teacher whenever practicable.

C. INSTRUCTIONAL MEDIA CENTERS

Media Centers are to be utilized on a non-scheduled basis to provide maximum accessibility to all pupils. Cluster teachers and specialists shall work with the Instructional Media Specialist in establishing an operational format which best satisfies the fulfillment of the function of the Media Center.

D. WEEKLY ALLOCATION OF INSTRUCTION TIME

	Kindergarten	Prim. I & II	Grades 3-6
Lang. Arts & Social Studies	500 minutes	1100 minutes	1000 minutes
Mathematics	100 minutes	200 minutes	250 minutes
Science		50 minutes	100 minutes
*Special Subject Areas	150 minutes	150 minutes	150 minutes
TOTAL INSTRUCTIONAL TIME	750 minutes	1500 minutes	1500 minutes

*In Gym, Art, Music, Performing Arts, etc., the total instructional time for any special subject class per week is not to exceed 100 minutes.

SECTION III: ROLE DEFINITION

The roles of the Principal and the Administrative Assistant Principals are not included. The Principal has the direct responsibility for the total program at the local school level. The specific duties and responsibilities of the Administrative Assistant Principal are interpreted by the Principals.

Roles of other personnel in the N.E.C. schools are defined. These roles are: (1) the Curricular Assistant Principal, (2) the Home Curriculum Specialist, (3) the Media Center Specialist, (4) the Paraprofessionals (the School Community Assistant and the Teacher Aide), and (5) the Teacher.

Each role is placed in its proper perspective relative to the basic goals of the N.E.C. Project and the agreement between the Board of Education and the Detroit Federation of Teachers. Any role resulting from additional service rendered to the N.E.C. schools should function in harmony with the project's goals and methods of operation.

A. Curricular Assistant Principal

The role of the Curricular Assistant Principal is an administrative one with emphasis on implementing the curriculum.

1. The Curricular Assistant Principal shall coordinate curriculum development activities.

    a. Guide the teacher clusters, provide direction to cluster meetings, and meet with each cluster a minimum of once per week.

    b. Assist the teachers in the writing of behavioral objectives in their respective disciplines.

    c. Assist teachers in developing methodology and teaching techniques that will assure continuous progress for each child in the school, with emphasis on language arts and computational skills.

    d. Work with other Curricular Assistant Principals in order to maximize the resources and services of such personnel.

    e. Promote curricular changes indicated by research and evaluation as related to the basic thrust of the project.

    f. Work with the principal, the administrative assistant principal, and teachers in the selection, procurement, and evaluation of instructional materials and supplies.

2. The Curricular Assistant Principal shall promote the development of innovative materials and insure their dissemination.

    a. Participate in workshops, institutes, and conferences that are relevant to the tasks of the Curricular Assistant Principal.

    b. Arrange and conduct in-service workshops in cooporation with the principal and the staff.

3. The Curricular Assistant Principal, under the direction of the principal, assists in the supervision and coordination of instruction.

    a. Visit classrooms, assist teachers, and demonstrate teaching and diagnostic techniques in the appropriate methodological approaches.

        i. Assist teachers by providing ideas (or sources) for games and other devices which aid in individualizing instruction.

ii. Assist teachers in discovering methods of utilizing developed materials and hardware in the classroom.

iii. Assist teachers in developing a classroom organization which will promote individualization of instruction.

iv. Guide teachers in establishing classroom diagnostic and prescriptive processes to enhance the growth and development of each child.

b. Work closely with the principal and teachers in the supervision and evaluation of the instructional program in each cluster.

c. Meet regularly with administrative personnel for the coordination and utilization of supportive services for the school.

i. Assist teachers in the selection of pupils for these services.

ii. Be instrumental in the development of an inventory profile including test records on each pupil in a cluster.

d. Work closely with the principal in the evaluation of instructional personnel.

e. Assist teachers in arranging field trips and special programs that evolve from curriculum plans.

f. Coordinate the efforts of all tutors.

4. The Curricular Assistant Principal shall supervise the overall testing program.

a. Coordinate the testing program and train teachers in administering, compiling, and recording tests and results.

b. Assist the staff in the utilization of test results through proper interpretation to teachers.

c. Coordinate the diagnosis of new pupils and communicate the results to the cluster to which the pupil has been assigned.

5. The Curricular Assistant Principal shall assist the principal in providing reports on and assessments of the instructional program for the community.

B. Home Curriculum Specialist

The responsibilities listed for the Home Curriculum Specialist apply in relationship to those children and families included in the caseload. Upon the recommendation of the principal, the Home Curriculum Specialist can work with children or families other than the ones in the regular caseload.

1. The Home Curriculum Specialist is a liaison person between the home, community, and school.

a. Spells out the curriculum and organizational structure for instruction.

b. Designs instructional materials and guides which parents can use.

2. The Home Curriculum Specialist has other duties and responsibilities.

a. Devises methods of communicating with parents.

b. Works on a one to one basis with the families of children who have specific problems which affect their learning.

c. Conducts workshops for parents and community people about the various phases of the curriculum.

d. Maintains a caseload file.

e. Systematically reports to the administration, the cluster, and individual teachers.

C. Media Center Specialist

The Media Center Specialist works with administrators, teachers, and paraprofessionals to insure maximum utilization of the media center by all learners. In conjunction with this task, the Media Center Specialist has the following duties and responsibilities:

1. The Media Center Specialist works with teachers, curricular assistant principals, and principals in the continuing process of updating, revising, and improving the services and resources of the media center.

2. The Media Center Specialist evaluates, orders, and maintains printed and audiovisual media materials.

   a. Selects, orders, and processes multi-media materials.

   b. Organizes materials for easy accessibility to the learner and teacher.

3. The Media Center Specialist gives direct instruction in library skills and in the use and manipulation of media materials.

   a. Organization and classification of library materials.

   b. Use of reference materials and methods of research.

   c. Book selection.

   d. Use of audiovisual materials.

   e. Oral language activities such as story telling, choral reading, puppet shows, dramatizations, and other enrichment activities as needed.

   f. Collection of materials related to the observance of special events.

4. Assists teachers in the choice of materials in planning units of work.

   a. Introduces new materials to the staff through in-service education in cooperation with the assistant principal during cluster meeting or approved workshops.

   b. Maintains a professional collection.

D. Paraprofessionals (The School Community Assistant)

Under the direction of the principal, the School Community Assistant is the paraprofessional liaison between the community and the school. The School Community Assistant's emphasis is interpreting the un-academic functions of the school to the community and the concerns of the community to the school.

The School Community Assistant is expected to spend the major part of the working schedule in and with the community.

1. The School Community Assistant is a liaison between the school and the community.

   a. Interpretation of the project to the community.

   b. Interpretation of community needs and actions to the school.

   c. Distribution of project materials in the community.

   d. Attendance at community meetings related to the school.

   e. Knowledge of overall school program.

   f. Knowledge of services in the community.

2. Report regularly to principal on work schedule, problems encountered, and suggestions about the program.

E. Role of The Teacher

Teachers in the elementary schools of the N.E.C. Project will devote the major amount of their professional time in activities directly related to the day-to-day relationships of teachers with students in the classroom setting, but this fact does not preclude or negate the responsibility that teachers have to meet in a satisfactory manner their role in the establishment and perpetuation of good inter-staff and school-community relations. All aspects of the educational process are viewed as critical to the pursuit and attainment of quality education. Thus a teacher's professional behavior in response to his responsibility to the development and perpetuation of good inter-staff and school-community relations is considered an integral part of the professional commitment and performance expected of teachers in the N.E.C. Project.

The role of the Teacher is the critical role affecting pupils' achievement in the N.E.C. Project.

1. Effective classroom management is an essential part of the implementation of the behavioral goals.

2. A teacher in his respective cluster unit is responsible for demonstrating an effective implementation of the following duties and responsibilities under the guidance and with the assistance of the curricular assistant principals.

   a. Establishes diagnostic and prescriptive processes to enhance the growth and development of each student.

   b. States teacher expectations for students in terms of behavioral goals.

   c. Arranges students within the cluster to provide the best possible setting for group and individualized instruction.

d. Effects a coordinated and integrated team approach to planning and instruction.

e. Establishes guidelines and methodology that provides for continuous and sequential instruction and flexibility.

f. Maximizes the use of instructional materials and methods appropriate to the NEC educational program which stresses the individualization of instruction.

g. Participates actively, regularly, and constructively in the deliberations of the meetings scheduled for cluster personnel on an individual and group basis.

h. Establishes and utilizes those curricular and instructional changes indicated by research and evaluation.

i. Engages in the process of self-evaluation for self and group improvement.

j. Establishes and utilizes an inventory profile for each student in the cluster.

k. Administers the appropriate achievement and diagnostic tests.

l. Makes use of the Media Center.

3. The teacher is aware of the community in which the school is situated. He is knowledgeable about the community and becomes involved where possible with community groups or programs.

4. The teacher encourages parental involvement in the educational process of children.

5. The teacher is responsible for providing appropriate work space and a set of written directions for teacher aides.

F. NEC Staff Coordinating Council

The NEC Staff Coordinating Council is the representative group of the DFT bargaining unit in the NEC schools. These guidelines have been established for the operation of the Staff Coordinating Council in the project:

1. The Project Director shall recognize the elected Union NEC chairman as the official representative of the Union in the NEC Project.

2. The Council shall include members of the DFT bargaining unit who shall be selected according to procedures determined by the Union. Each of the four NEC schools shall have three regular Council members plus alternates.

3. The Project Director shall meet at least monthly with the Council, if requested by the Council Chairman, to consult on project problems and policies as they relate to established Board policies and procedures and the DFT Agreement. No other committee shall exist for this purpose. The NEC Council should not replace the School Union Committee in each of the project schools, but should address itself to problems and policies unique to the NEC Project, or common to the project schools.

4. Whenever the members of the bargaining unit are mutually scheduled by the parties to participate, during working hours, in conferences, meetings or negotiations with the project administration, they shall suffer no loss in pay.

5. In the event the Project Director, or his designated representative and the Council are unable to resolve a difference on a policy matter, they shall present separate written or oral reports at the appropriate step of the grievance procedure, as stated under Article XXI, Grievance Procedure in the DFT Agreement.

6. Each NEC School Building Representative shall serve as a member of the NEC Council during his term of office (September to September, elected in May according to DFT By-Laws).

7. Each NEC School shall elect additional Council members and alternates to serve from December to December. Member and alternate qualifications are:

   a. At least one year experience as a teacher in the NEC Project.

   b. Be a member of the bargaining unit.

   c. Be a DFT member for at least six months preceding the election.

8. The Council Chairman and his alternate or co-chairman shall be elected project-wide and shall meet the same qualifications as listed above. The election procedures shall be determined by the four Building Representatives (or their respective designees) with the DFT office supplying the ballots and other necessary materials, as directed by this election committee.

9. The appropriate alternates shall act as chairman or Council members when regulars are absent or unable to serve. When a vacancy occurs, the alternate shall serve until a new election can be held, which shall be within thirty school days.

10. Each school should have three regular Council members, plus alternates.

11. The chairman and co-chairman shall be in addition to the Council members elected to represent each school.

G. Teacher Aide

In order to assist the classroom teachers with clerical and routine classroom duties the services of Teacher Aides (School Service Assistants) are provided. The Teacher Aides are under the direction of the principal, who will post a schedule in the office.

The Teacher Aide spends the majority of her time with teachers and pupils in activities directed by the teacher.

1. Assistance to individual children or small groups of children with individualized instruction.

2. Assistance to teachers with routine duties and clerical work.

PART SIX: IN-SERVICE EDUCATION

A major ingredient essential to the successful implementation of the goals of the NEC Project is the establishment of the free transmission of ideas, concerns, understandings, and recommendations among those personnel who have the responsibility for executing the instructional programs established for the four schools in the Project. In order to provide the necessary operational conditions to facilitate this process of communication and learning, in-service education must be an integral part of the NEC Project's focus. The professional commitments accepted by all Project personnel as well as the goals of the NEC Project mandate that all Project personnel be involved in a continuous formal and informal program of in-service education.

In-service education in the NEC Project is viewed as the sum of all the experiences, both formal and informal, provided for instructional and non-instructional personnel that contribute to the comprehension, refinement, and advancement of the critical conceptual and operational elements of the Project. The paramount consideration in the establishment of in-service education needs, priorities, and processes is that teachers -- who must play the dominant role in the implementation of the advocated conceptual and operational elements -- must participate fully in the determination of their specific needs and in the establishment of structures to resolve such needs. The restructuring of the educational programs of four elementary schools requires not only a massive program of in-service education, but also that the staffs in these schools demonstrate intellectually and physically an involvement in the processes of in-service education. Since all Project personnel are essential to the delivery and receipt processes of in-service education, participation for all Project personnel is not optional but required.

SECTION I: CLUSTER MEETINGS

The organizational structure identified in the NEC Project as the cluster is the primary format for the grouping of teachers with pupils to implement the Project's commitment to a program of individualized instruction. Along with the regular allocation of 120 minutes per week per teacher for preparation time, teachers assigned to clusters are provided 80 additional minutes per week for cluster planning time. Cluster planning time permits each cluster to meet as a unit in order to assess and to project its total activities. Along with the individual responsibility of each cluster member for the progress of cluster planning meetings, the Assistant Principal for Curriculum has a specific responsibility to give direction to and provide coordination for the efforts of the individual cluster member and the cluster as a unit. Examples of areas of concentration during cluster planning meetings are the following:

1. Instruction in sequencing learning activities.

2. Instruction in stating learning goals behaviorally.

3. Demonstration of and exposure to teaching aids, instructional techniques, and evaluative instruction.

4. Sharing of information about sources of materials for teaching and learning.

5. Sharing of individual evaluations of new teaching materials.

6. Instruction in diagnosing, prescribing and devising individualized learning designs.

SECTION II: STAFF MEETINGS

Staff meetings in NEC Project schools shall be used to augment, generate, and disseminate information for further implementation by clusters. Also, staff meetings shall be used for treating cross-cluster and non-cluster areas of concern. The major responsibility for planning and coordinating staff meetings in terms of the in-service education needs and concerns of staff rests with principals, but teachers and other members of a school staff are expected to insure the vitality and relevance of staff meetings through active participation in and feedback from the various in-service education structures established for Project personnel on a project-wide and local school basis. Examples of groupings in which staff meetings can be organized and of areas for consideration are presented below:

A. Many different types of organization of a staff meeting are possible in order to achieve the in-service education goals of the NEC Project schools. These include:

   1. Meetings of several clusters with common concerns.

   2. Grade meetings within each building.

   3. Subject area meetings within each building.

   4. Grade meetings across the project schools.

   5. Subject area meetings across the project schools.

   6. Meeting of total staff within a school.

B. In-service education activities for consideration during staff meetings are:

   1. Sharing of ideas, expectations and innovative approaches to learning.

   2. Reviewing or study of films, filmstrips, records, books, and other publications.

      a. Professional growth materials.
      b. Pupil instructional materials.

   3. Demonstration of new or unfamiliar materials by experts.

   4. Construction of individual pupil profiles.

   5. Devising guidelines for home visitations.

   6. Defining a unified program of individualized instruction appropriate to all clusters in NEC schools which would include:

      a. Teacher-pupil instruction.
      b. Pupil-pupil instruction.

   7. Meeting with outside consultants from the Division of Instruction, commercial firms, and other sources.

SECTION III: IN-SERVICE EDUCATION COMMITTEES

A. PROJECT-WIDE COMMITTEE

A Project-Wide In-Service Education Committee shall be established. This committee shall be comprised of the following personnel:

1. One (1) Principal
2. One (1) Curricular Assistant Principal
3. One (1) Administrative Assistant Principal
4. Four (4) Teachers

Administrative personnel who serve on this committee are appointed by the Project Administrator. Teachers who serve on this committee are members of a Local School In-Service Education Committee who are selected by the members of such to serve on the Project-Wide In-Service Education Committee. Each school shall send one (1) duly elected teacher representative to this committee. This committee shall perform the following responsibilities:

1. Coordinate the efforts of each Local-School In-Service Education Committee.

2. Disseminate information and distribute materials to and from Local-School In-Service Education Committees.

3. Submit recommendations to the Project Administrator in reference to the over-all program of In-Service Education.

B. LOCAL SCHOOL COMMITTEE

In each of the four elementary schools, there shall be established an In-Service Education Committee. This committee shall be comprised of the following personnel:

1. DFT Building Representative
2. One Teacher Elected From Each Cluster
3. All Members of the Administrative Staff

The Principal shall be the permanent Chairman of the Committee. Each Cluster shall elect one (1) teacher to serve on the Committee. The DFT Building representative shall automatically become a member of the Committee. Each member of the In-Service Education Committee shall have one (1) vote in the determination of in-service education policies and procedures as such relate to the following at the local-school level:

1. Identification and establishment of needs and priorities.

2. Establishment of appropriate processes for resolution of needs and priorities.

3. Assessment of over-all program of in-service education.

SECTION IV: WORKSHOPS, CONSULTANTS, AND VISITATIONS

The NEC Project's conceptual approach to learning and instruction places specific commitments on the expected professional behavior of all personnel who are intimately involved in the total process of instruction. Along with cluster planning time, the local school and project-wide workshops represent the major thrust of the Project's program of in-service education. At the local school level, workshops are organized to permit a staff to respond to its particular needs in regard to the implementation of the essential elements of the Project. Each staff is expected to give top priority to the development of skills and materials relevant to the Project's program of individualized instruction as it allocates its local school funds for in-service education. On a project-wide basis, workshops provide a means by which staff representation from the four schools can respond collectively to the problems and needs of the Project in order that there can be program continuity among and staff development in the four schools.

Consultants from within and without the Detroit Public Schools shall be used as their respective expertise and experiences are deemed useful to the refinement and advancement of the critical conceptual and operational elements of the Project. The decision regarding the relevancy of any particular consultant rests with the group or the individual making the appropriate request.

Visitations by Project personnel are encouraged, but due to the limitations placed on staff visitations for in-service education purposes by limited funding and staff time for such, staff visitations during regular school hours must have the prior approval of the principal and the final approval of the Project Administrator. Those visitations by staff which take place after regular school hours for which some financial support is sought from Project funds must also be approved by the principal and the Project Administrator.

SECTION V: PROJECT-WIDE AND LOCAL SCHOOL WORKSHOPS

A. PROJECT-WIDE WORKSHOPS

The responsibility for certain in-service education functions has been delegated to Project-Wide Workshops. Such workshop groupings are established by the Project Administrator to give needed assistance to the overall effort to refine and advance the critical conceptual and operational elements of the Project. The established Project-Wide Workshops exist to provide direct and indirect services and funds to the ongoing in-service education activities of each school. Personnel assigned to Project-Wide Workshops function to handle those in-service education problems and needs which can best be confronted and resolved on an organized project-wide basis.

Each of the four schools shall have teacher representation on the standing membership of each Workshop as well as the general membership. Also, each school shall receive direct services in terms of materials and training from Project-Wide Workshops. The selection of standing membership for a Workshop will be made by the Project Administrator who shall base his appointments on the recommendations submitted by local school administrators. School administrators assigned to Project-Wide Workshops are also appointed by the Project Administrator.

The goal is to involve as many teachers and administrators as possible in a massive and diversified approach to in-service education geared to the development of a thorough understanding, refinement, and implementation of the essential elements of the Project. This goal cannot be achieved without a high degree of teacher-administrator cooperation and without the extended participation of teachers in the identification of need priorities and in the establishment of processes to resolve effectively such needs.

B. LOCAL-SCHOOL WORKSHOPS

Each school working through the structure of the Local School In-Service Education Committee is responsible for the establishment of a comprehensive program of in-service education related to staff needs associated with the implementation of the critical conceptual and operational elements of the Project. Funds are allocated to each school based on the number of staff personnel to set-up local school workshops. It is through such local school workshops that a staff concentrates more fully its efforts to resolve its particular needs in regard to the implementation of the essential elements of the project. Each school is given the flexibility to establish its desired approaches to meet its needs, but the resultant in-service activities for funding purposes must demonstrate a compliance with the overall Project requirement that such funded activities give priority to skill development among staff and to the production of instructional materials.

SECTION VI: ORIENTATION OF NEW STAFF

The thorough induction of personnel new to the member schools of the NEC Project is pivotal to the successful implementation of the critical conceptual and operational elements advocated in the Project. It is vital that new staff members develop a comprehensive understanding of the essential elements of the Project and that they individually and collectively demonstrate professional commitment to the refinement and advancement of such elements. The Project Administrator and Principals share the direct responsibility for the provision of professional experiences that can accomplish the orientation needs of personnel new to the Project, but all personnel in the Project have a responsibility to participate effectively in the total process of inducting new personnel into the accepted procedures, practices, and policies of the NEC Project.

The Project Administrator is responsible for the provision of orientation experiences for personnel new to the Project which can best be handled through a coordinated Project-wide approach to orientation. Each local school Principal is responsible for the provision of those orientation experiences which are best established at the local school level. A Project-Wide Orientation Committee is established with the Chairman and other committee members appointed by the Project Administrator. This committee is comprised of both administrators and teachers and is assigned the task of reviewing the orientation efforts conducted at the local school level and of establishing Project-wide orientation experiences for personnel new to the project.

PART SEVEN: COMMUNITY PARTICIPATION

The Title III Proposal which gave conceptual birth to the NEC Project had provision for an extensive degree of community participation in the determination of education policies, practices, and programs in the member schools of the Project. On April 22, 1969, the Detroit Board of Education gave its official approval to a plan for community participation in the NEC Project which was formulated by the members of the Education Sub-Committee of the Neighborhood Service Program (NSP). The members of the Education Sub-Committee after negotiating with representatives of the Board of Education developed a structure for community participation in the decision-making process as it pertains to school affairs in the Project. This segment of the documentation of the critical conceptual and operational elements of the Project presents an extraction of the major agreement reached between the Board of Education and the Education Sub-Committee.

SECTION I: PURPOSES

The elected Neighborhood and Regional Planning and Evaluation Councils shall have an intimate and legitimate role in the decision-making process as it pertains to school affairs. The various elected Councils shall concern themselves with the affairs of the school that are within the jurisdiction of school personnel. These affairs include, but are not limited to: curriculum, school organization, health, report cards, communication with parents, discipline, personnel, physical plant and site, and suspensions and expulsions.

The Neighborhood Planning and Evaluation Councils are authorized to carry out the following responsibilities:

1. Participate in the redress of parent and community grievances involving the school.

2. Work jointly with school personnel in the evaluation and revision of existing or proposed systems for reporting student academic and social progress.

3. Cooperatively develop with school personnel effective and acceptable forms of communication between school and community.

4. Encourage, develop, and/or negotiate the establishment of specific proposals for improvements in the educational process.

5. Review existing or proposed school policies, programs, and practices.

6. Participate as the consultative community body in the assessment of and recommendations for any major building construction, repair, or remodeling.

7. Select the local school principal when a vacancy occurs. This selection process shall be accomplished in conjunction with the Region Superintendent or his designee. The Region Superintendent or his designee shall serve as the non-voting chairman of the body that selects the principal. The Council shall select a principal to fill a vacancy from a list of five (5) candidates supplied by the Division of Personnel. The P & E Council and the principal shall jointly participate in the process of selecting an assistant principal when a vacancy occurs.

The Regional Planning and Evaluation Council shall attempt to identify and to resolve issues between local school principals and the Neighborhood Planning and Evaluation Councils that reach the stage of impasse. When such issues reach the stage of impasse, the Region Superintendent or his designee shall render a decision. The Councils shall have the right to appeal a decision rendered by the Region Superintendent or his designee to the various echelons up to and above that of the Superintendent of Schools.

The Regional Planning and Evaluation Council shall be established to carry out the following responsibilities:

1. Coordinate the community involvement efforts of the various Neighborhood Planning and Evaluation Councils.

2. Meet with and independently of the Region Superintendent in order to facilitate the evaluation of existing and proposed educational policies, programs, and practices as they relate to the member schools that comprise the Regional Planning and Evaluation Councils.

3. Participate in the redress of issues that have an impact on the educational process in any of its member schools or that have an impact on the general educational process in the school attendance areas covered by the Regional Planning and Evaluation Councils.

4. Organize itself into sub-structures in order to effect an efficient process for the identification and resolution of the problems and needs that confront member schools of the Regional Planning and Evaluation Councils.

5. Prepare an annual report to the community served by the Regional Planning and Evaluation Council which assesses the work of the Councils and the improvements, problems, and needs of the various educational institutions served by the Councils.

SECTION II: MEMBERSHIP – LOCAL AND REGIONAL COUNCILS

A. NEC ELEMENTARY SCHOOL: NEIGHBORHOOD PLANNING AND EVALUATION COUNCILS

Criteria for Eligibility:

Those residents of the local school attendance area who have attained the age of 18 years and who are not students in a private or public elementary or secondary school are eligible to be elected.

Those parents of students attending schools that are eligible for Planning and Evaluation Councils but who are not residents of the specific school attendance area are eligible for membership on a P & E Council.

Design for Membership:

The Elementary School P & E Councils shall each consist of nine (9) members.

Parents and guardians of pupils attending the school shall have the majority of seats (5) on each Council.

Term of Office:

Persons elected to the Elementary School P & E Council shall serve a term of one (1) year. Term begins the day after school officially closes for Summer recess.

Alternates:

Alternate representatives to the P & E Councils shall be elected to provide replacements if any elected P & E Council member shall resign during his term of office.

There shall be nine (9) alternates elected.

Number of Councils:

The present design provides for the election of six (6) P & E Councils at the elementary school level. (The Nichols and Monteith Schools, although not NEC Project Schools, are feeder schools to the Butzel Junior High School.)

B. NEC JUNIOR HIGH SCHOOL: NEIGHBORHOOD PLANNING AND EVALUATION COUNCIL

Criteria for Eligibility:

Those residents of the Junior High School attendance area who have attained the age of 18 years and who are not students in a private or public elementary or secondary school are eligible to be elected.

Those parents of students attending the Junior High School who do not live in the specific attendance area of the school are eligible for membership on the Junior High School P & E Council.

Those students in the Junior High School who are elected by their fellow students to serve on the Junior High School P & E Council are eligible.

Design for Membership:

Each feeder elementary school shall elect five (5) eligible persons to serve on the Junior High School P & E Council.

Three (3) of the five (5) eligible persons from each feeder school shall be parents of students attending the Junior High School.

The student body at the Junior High School shall elect six (6) students to serve as voting members on the Junior High School P & E Council.

Term of Office:

Persons elected to the Junior High School P & E Council shall be elected for a term of one (1) year. Term begins the day following the official date for the closing of school for the summer recess.

Alternates:

At the elementary school elections of members to serve on the Junior High School P & E Council each elementary school attendance area shall elect five (5) alternates to the P & E Council.

The student body at the Junior High School shall elect (12) students to serve as alternates to the Junior High School P & E Council.

Number of Councils:

There shall be one Junior High P & E Council serving the Butzel Junior High School attendance area.

C. NEC SENIOR HIGH SCHOOL: NEIGHBORHOOD PLANNING AND EVALUATION COUNCIL

Criteria for Eligibility:

Those residents of the Senior High School attendance area who have attained the age of 18 years and who are not students in a private or public elementary or secondary school are eligible to be elected.

Those parents of students attending the Senior High School who do not live in the specific attendance area of the senior high school are eligible for membership on the Senior High School P & E Council.

Those students in the Senior High School who are elected by their fellow students to serve on the Senior High School P & E Council are eligible.

Design for Membership:

Each feeder school neighborhood to the Senior High School shall elect three (3) eligible persons to serve on the Senior High School P & E Council.

Two (2) of the three (3) eligible persons from each feeder school elected to the Senior High School P & E Council shall be parents of students who attend the Senior High School.

The student body at the Senior High School shall elect six (6) students to serve as voting members on the Senior High School P & E Council.

Term of Office:

Persons elected to the Senior High School P & E Council shall serve a term of one (1) year.

Alternates:

At the feeder school elections of members to serve on the Senior High School P & E Council, each feeder school shall elect three (3) alternates to the Senior High School P & E Council.

The student body at the Senior High School shall elect twelve (12) alternates to the Senior High School P & E Council.

Parents of students of the Junior High and Senior High who do not live in the school district, and who would therefore not be eligible to vote at any of the elementary school election meetings, shall meet at the junior high and at the senior high to elect their proportionate share of members of their school's Councils.

Number of Councils:

There shall be one (1) Senior High School P & E Council serving the Martin Luther King, Jr. Senior High School attendance area.

D. NEC REGIONAL PLANNING AND EVALUATION COUNCIL

Criteria for Eligibility:

Those residents of each feeder school to the Region P & E Council who have obtained the age of 18 years and who are not students in a private or public elementary or secondary school are eligible to be delegates to the Regional P & E Council.

The parents or guardians of students attending feeder schools to the Regional P & E Council who are not residents of the specific feeder school attendance area are eligible to be delegates to the Regional P & E Council.

Design for Membership:

Each Local School P & E Council shall elect two (2) members of that body to serve as delegates to the Regional P & E Council.

The Neighborhood Service Program Citizens Committee's Education Sub-Committee shall be represented on the Regional P & E Council be seven (7) members. The representation of the Education Sub-Committee of the NSPCC shall be established in the following manner:

A. Five (5) persons who are elected representatives to the NSPCC and who are also members of the Education Sub-Committee of the NSPCC.

B. Two (2) persons who are members of the NSPCC Education Sub-Committee who are not elected representatives to the NSPCC.

Term of Office:

Persons delegated to the Regional Planning and Evaluation Council shall serve a term of one (1) year.

Number of Regional Councils:

There shall be one (1) NEC Regional P & E Council.

SECTION III: SCHEDULED MEETINGS

1. Each Neighborhood Planning and Evaluation Council shall establish a schedule of at least one (1) meeting per month with the local school principal during the regular school year.

2. At a mutually convenient time, the Neighborhood P & E Council or the principal may schedule special joint meetings.

3. The Neighborhood P & E Council shall schedule no fewer than five (5) meetings per school year with local school residents for the purpose of presenting and reviewing its operation and proposed activities.

4. The Regional P & E Council shall establish a schedule of at least five (5) meetings during the regular school year with the Region Superintendent or his designee.

5. The Regional P & E Council shall be free to conduct as many meetings of the Council as the members of the Council deem appropriate to carry out its responsibilities.

6. The Region Superintendent or the Regional P & E Council may schedule at a mutually convenient time a special meeting involving the Council and the Region Superintendent or his designee.

SECTION IV: RELATIONSHIP OF NSPCC EDUCATION SUB-COMMITTEE

The following statements outline the relationship of the Neighborhood Service Program Citizens Committee's Education Sub-Committee to the Neighborhood and Regional Planning and Evaluation Councils.

1. To initiate and maintain contact with the principal of the school.

2. To inform and enlist support of members of existing school parent groups, school-community aides, and other neighborhood leaders in carrying out the campaign of informing and bringing out the residents to the election meeting.

3. To supervise writing, printing, and distribution of flyers announcing the election meeting.

4. To supervise and direct the election meeting. Those Education Sub-Committee members who live in the area shall not participate in the supervision of the election.

5. To see that the guidelines agreed upon by the NSPCC Education Sub-Committee and the NSPCC are strictly observed.

6. Existing parent or community groups attached to the schools where P & E Councils are to be established shall be approached by the Education Sub-Committee prior to any activities related to the election of representatives to the Councils. The Education Sub-Committee shall meet with the various groups to explain the structure and function of the NSPCC in relationship to the projected P & E Councils. The Education Sub-Committee shall explain to the various groups the detailed plans for democratic election procedures.

SECTION V: INTERRELATIONSHIPS

1. The principal shall submit to the Neighborhood P & E Council at one of the scheduled joint meetings his professional assessment of the educational programs, policies, and practices of the school.

2. The principal shall make available to the Neighborhood P & E Council all reports, records, materials, and information deemed appropriate and relevant by the Region Superintendent or his other administrative superiors.

3. The formation of Neighborhood P & E Councils does not and should not change the responsibility of the school to work with and deal with individuals and groups formed independently from the Council. The principal shall be free to schedule meetings with parents and/or residents (either member or non-members of the Council) as frequently as he believes necessary in the best educational interests of the school. Policy decisions, however, are to be made only after consultation with the elected Council.

4. The Neighborhood P & E Council shall likewise be free to schedule meetings with parents, residents, teachers, and students as frequently as it believes necessary.

5. In addition to his responsibility to the higher echelons of administration and the policy of the Detroit Schools as defined by the Board of Education, the principal shall be *responsible* to the local school community for the efficiency *of his staff* and the educational program in raising and maintaining the level of academic achievement.

6. The Region Superintendent or his designee shall submit to the Regional P & E Council, at one of its regularly scheduled meetings, a report of the past and proposed educational policies of those schools in the Regional P & E Council.

7. The Region Superintendent shall make available to the Regional P & E Council appropriate and relevant reports, materials, records, and information deemed appropriate by his administrative superiors.

SECTION VI: ELECTION PROCEDURES

1. The electoral base of each Neighborhood P & E Council shall be the neighborhood which is within the boundaries of the Elementary school service area.

2. The NSPCC Education Sub-Committee shall contact the elementary school principal to exchange information and reach a common understanding about the election schedule.

   a. The principal shall assist by providing information and maps of the school's service area, as well as names and addresses of the officers of any school parent groups and neighborhood block clubs. He shall also provide the facilities for the election meeting.

   b. The principal may only assist by allowing the pupils to carry home the flyers announcing the election meeting. The principal, and all school staff who are non-residents, shall not disseminate information themselves, either written or by word of mouth.

   c. At the time of the registration of voters, the principal shall make available a list providing the addresses and names of non-resident parents and guardians.

3. Members of the NSPCC Education Sub-Committee shall contact neighborhood leaders, existing parent and school-centered groups, block clubs, and other organizations within the school's service boundaries to enlist their aid and concerted drive to inform all residents of a scheduled election meeting at which all who attend will nominate and elect members of their P & E Council. The drive should take Education Sub-Committee members, working with neighborhood residents, from door to door and into block by block house meetings. Every resident of the school's service area shall be informed.

4. There shall be supervised door to door distribution of flyers just prior to the meeting as a final reminder to an already informed electorate. There shall also be a distribution of notes to children in school to take ~~home~~ to their parents. The goal is saturation of information within the school area while avoiding publicity outside the area.

5. As neighborhood residents *enter* the election meeting, they shall be registered when they establish eligibility by giving their names and addresses at the registration desk. Each eligible voter shall receive a voter's name tag. If challenged, persons registering should be prepared to show proof of residence and identity. Non-resident parents of pupils in that school shall be asked to provide their child's name as well, so that it may be checked with the school's enrollment list. Anyone who is found to have falsified registration information shall not be eligible to vote or to serve on the P & E Council.

6. The preparation of ballots, the election of Council members, and the certification of Council members shall be conducted by a third party to be mutually agreed upon by the Region Superintendent and the Education Sub-Committee of the NSPCC.

PART EIGHT: EVALUATION

In any project with the scope of the Neighborhood Education Center, the need for evaluation is both critical and pressing.

The formal evaluation of the project is carried out by the American Institutes for Research. Within the project the administration and staff is constantly participating in self-assessment as implementation of the project occurs. Any appraisal of the NEC Project must furnish sound data to guide the educational improvement inherent in the project process.

> Innovation in education, whether it involves the use of new curriculum materials or new educational technology, has become essential if the schools are to be genuinely effective in achieving their aims and goals. Continuing assessment of the product of the schools also is necessary. This means the development of the principles and techniques for critically judging the worth of whatever the schools teach and the effectiveness and efficiency of their methods of instruction.[1]

In the NEC Project evaluation is a continuing process. Systematic assessment of both the NEC process and product supplies critical information to the project administration and teaching personnel which is utilized in the continued improvement of the project.

Process evaluation in this project is concerned with the examination of the success with which the project methodology is implemented in each school and in each cluster of four teachers and sixty-six children. Included in the process evaluation is the examination of the degree to which key personnel fulfill their prescribed roles and how this is related to successful implementation of project methodology. A third project component which is evaluated as part of process assessment is the continuous in-service training carried out in NEC.

In the process phase of evaluation there are four major tools utilized to obtain the needed data.

1. Questionnaires and/or Rating Instruments: these are administered to all staff levels periodically and request information or ratings on or about all of the critical and conceptual operational elements of the project.

2. Cluster Profiles: rating instruments utilized to assess in great detail the degree to which each cluster is operation. The criteria included define the methodology in its component parts.

3. Cluster Summary: a ten item rating scale to evaluate clusters in the general terms of the operational elements of the project.

4. Observation: systematic observation of the instructional setting and operations in the project. Observation of clusters augments the data obtained from the use of the Cluster Profile and Cluster Summary.

Included in this section of the guide are the Cluster Profile and Cluster Summary. The two instruments outline what any evaluator might expect to find in an operational cluster.

Product evaluation in this project is concerned with the assessment of pupil performance on two types of measurement: tests referenced to the behavioral objectives and standardized achievement tests. It is also concerned with drawing some conclusions about how pupil performance is dependent upon or independent of the successful implementation of the critical and conceptual elements of the NEC Project in each cluster.

[1] Innovation in Education: *New Directions for the American School* (New York: Committee for Economic Development, 1968), p.13.

As the major emphasis for instruction is based upon the stated behavioral objectives which represent priority skills in language and math, it is mandatory that pupil performance of the skills be measured. This is accomplished by the administration of mastery tests referenced to single objectives (ORTs) and mastery tests which measure performance on sequential sets of objectives (CETs). The results of each ORT and each CET administered become part of the pupil performance data utilized in assessing the product of the NEC Project.

Assessment of the broader and more general type of achievement as contrasted to that stated in the specific behavioral objectives is accomplished by annual administration of appropriate levels of the Stanford Achievement Tests (SAT) to all children in the project. These standardized achievement tests or norm referenced tests are given each May. The data obtained are analyzed in the context of the grade equivalent norms as well as in the context of improvement of pupil performance within the project with the preceding set of SAT results serving as control data.

The major burden for the evaluation of the NEC Project is the responsibility of the American Institutes for Research (AIR). As the contracted evaluators, AIR staff are involved in both evaluation of the process and of the product in the NEC Project. AIR has the responsibilities of preparation of the ORTs and the CETs, the preparation and administration of all questionnaires and rating forms, the systematic observation of project implementation, and the task of providing a continuous flow of evaluating information to the project administration and school personnel.

AIR's task of providing feedback of information for decision making purposes includes data from both process and product evaluation. A major part of the feedback is the provision of individual pupil profiles and cluster profiles representing the measured performance on the skills stated in the behavioral objectives. As the profiles will be provided every six weeks, there will be a continuous flow of data which reflect the success of instruction in each cluster.

In the product phase of evaluation of the NEC Project, AIR prepares an annual final report which presents not only the data utilized in product evaluation but the results of process assessment. The final annual report summarizes all data collected and draws conclusions about the success of the project and changes in pupil performance.

Evaluation, as carried out within the project by project administration and personnel, is also both process and product. Each teacher and each cluster of teachers with the assistance of the curriculum assistant principals are daily and weekly assessing their instructional effectiveness and the performance of their pupils. Staffs of the project schools in conjunction with their school administration and the project administration periodically review the operations of the project within each school. Teacher representatives who are members of the NEC Staff Coordinating Council and the Project Administrator review and assess the project at least once a month. The administration of the schools, principals and curriculum assistant principals, meet with the Project Administrator frequently to discuss the on-going implementation of the project components.

Representatives of all of the fore-mentioned staff groups come together in a group called the NEC Curricular Task Force to discuss successes and concerns. Through this group much self-assessment occurs. The Curricular Task Force acts as a clearing-house as well as an in-house evaluation group.

Finally, each school's Planning and Evaluation Council and the Regional Planning and Evaluation Council act as review agents within the context of the operations of the project. School and project administration meet with these groups to keep them appraised of the current status of project operations.

Each and every organizational element of the NEC project is involved in process and product evaluation. Data submitted to the Project Administrator by AIR provides one source of information from which staff may evaluate. Internally collected data is the second source of information for self-assessment.

Project administration and personnel and the American Institutes for Research jointly examine the project through process and product evaluation. Such joint assessment brings about an evaluation that presents a very thorough assessment of the NEC Project.

The evaluation of the on-going in-service education programs and activities and the assessment of future needs related to in-service education is a continuous process that is coordinated by the efforts of the NEC In-Service Education Committee. This committee is comprised of three administrators and four teachers. Each teacher is appointed from his/her respective local school In-Service Education Committee by the teacher members of that committee. Administrators who servce on the project-wide In-Service Education Committee are appointed by the Project Administrator. The Committee is assigned the following responsibilities:

1. Coordinate the efforts of each Local School In-Service Education Committee.

2. Disseminate information and distribute materials to and from Local School In-Service Education Committees.

3. Submit recommendations to the Project Administrator in reference to the overall program of In-Service Education.

The American Institutes for Research (AIR) has the responsibility to provide the formal assessment of the in-service education efforts of the Project as such contribute to the successful refinement and advancement of the critical conceptual and operational elements of the Project.

NEC CLUSTER PROFILE

The NEC Cluster Profile can be used by principals and curricular assistant principals to evaluate cluster performance in the local school. The teachers in a cluster may use it for self-evaluation. It also may be used by AIR in their observations of clusters throughout the four project schools.

The profile has four major divisions: methodology, interaction patterns, record keeping, and learning materials. Each major division includes a listing of related criteria which need judging for a description of cluster operations. The ratings have been placed on a 1-5 continuum reflecting the range from "little or no" to "very much" of whatever the criterion in question might be.

If the profile is used periodically, it can become a pre-post type of tool for administration and staff. Used in this manner, the Cluster Profile is providing data from which decisions can be made to bring about continuous improvement in cluster operations in NEC.

NEC CLUSTER PROFILE

SCHOOL_____ DATE_____

Cluster_____ Assessor_____

Title_____

Section I: Rank the degree of implementation of each element in the cluster. Circle the number.

1 = No effort 3 = 50% effort 5 = 100% effort

2 = 25% effort 4 = 75% effort

CRITERION	RANKINGS
I. METHODOLOGY	
A. Behavioral Objectives are stated.	1 2 3 4 5
B. Diagnosis occurs.	
1. CETs are used.	1 2 3 4 5
2. ORTs are used.	1 2 3 4 5
3. Results are analyzed.	1 2 3 4 5
4. Other information is considered.	1 2 3 4 5
C. Appropriate Prescriptions are used.	
1. Learning sequences are outlined.	1 2 3 4 5
2. Corequisite skills are considered.	1 2 3 4 5
D. Application	
1. Lesson plans are written.	1 2 3 4 5
2. Individualized instruction occurs.	1 2 3 4 5
3. Learning materials are appropriate.	1 2 3 4 5
4. Pupils are given opportunity to make progress.	1 2 3 4 5
E. Assessment	
1. ORTs and CETs are used.	1 2 3 4 5
2. Results are analyzed.	1 2 3 4 5
3. Decisions regarding instructional alternatives are made.	1 2 3 4 5
4. New instruction is implemented.	1 2 3 4 5

Section II: Rank the degree to which each of the descriptive phrases is operational in the cluster. Circle the number.

1 = Never operational
2 = 25% operational
3 = 50% operational
4 = 75% operational
5 = 100% operational

CRITERION	RANKINGS
II. INTERACTION PATTERNS:	
A. Teacher-Pupil Work	
1. Large groups exist.	1 2 3 4 5
2. Small groups exist.	1 2 3 4 5
3. Individual Pupil Activity exists.	1 2 3 4 5
4. Teacher assists individual pupils.	1 2 3 4 5
5. Pupils request help.	1 2 3 4 5
6. Discussion occurs between teachers and pupils.	1 2 3 4 5
7. Pupils contribute to group work.	1 2 3 4 5
8. Intra-cluster lines are crossed.	1 2 3 4 5
9. Pupils are grouped and re-grouped as needed.	1 2 3 4 5
10. Evidences of teacher-pupil planning exist.	1 2 3 4 5
11. Pupils participate in self-evaluation, progress is shared with child.	1 2 3 4 5
12. Opportunities for pupil-initiated work exists.	1 2 3 4 5
B. Staff Interaction	
1. Cluster and individual teachers plan for learning experiences.	1 2 3 4 5
2. Teachers participate as colleagues during planning periods and in the classroom.	1 2 3 4 5
3. CAP-Teacher cooperatively plan.	1 2 3 4 5
4. All teachers share the responsibility for cluster operations.	1 2 3 4 5

C.	Pupil Action-Peer Interaction					
	1. Pupils work with software.	1	2	3	4	5
	2. Pupils use hardware.	1	2	3	4	5
	3. Pupils check own work independently.	1	2	3	4	5
	4. Pupils work independently with other pupils.	1	2	3	4	5

Section III: Rank each item according to the scale given. Circle the number.

1 = Infrequently done 3 = 50% current 5 = 100% current

2 = 25% current 4 = 75% current

CRITERION		RANKINGS				
III.	RECORDS:					
A.	System-Required Records:					
	1. Scores from regular testing.	1	2	3	4	5
	2. Health records.	1	2	3	4	5
	3. Anecdotal records.	1	2	3	4	5
	4. Other pertinent information.	1	2	3	4	5
	5. Indication that outside referrals are made.	1	2	3	4	5
B.	Project Records:					
	1. Scores from project testing.	1	2	3	4	5
	2. Optional test records.	1	2	3	4	5
	3. Diagnostic information from CETs and ORTs.	1	2	3	4	5
	4. Pupil profiles and/or checklists.	1	2	3	4	5
	5. Records of mastery on CETs and ORTs.	1	2	3	4	5
	6. Pupil-Family data records.	1	2	3	4	5

Section IV: Rank according to the scale given. Place numbers in appropriate blocks. 1 = Never 2 = Seldom 3 = Sometimes 4 = Frequently 5 = Very Frequently	Correctly used	Appropriate for Performance Skills	Available for Pupil's use	Readily accessible for teachers	Available for optional use by teachers	Available for individual pupil selection and use	Good Quality
IV. Learning Materials							
A. Textbooks							
1. Language Arts							
2. Computational Skills							
B. Hardware							
1. Audio Flash Cards							
2. Tape Recorders							
3. Movie Projectors							
4. Filmstrip/slide Projectors							
5. Overhead Projectors							
C. Software							
1. Commercial Materials							
2. Teacher Produced or Prepared Materials							

NEC CLUSTER PROFILE SUMMARY

ASSESSOR

SCHOOL _____ CODE

Project Administrator

DATE _____ O: OPERATIONAL
PO: PARTIALLY OPERATIONAL
NO: NON-OPERATIONAL
NA: NOT-APPLICABLE

PRINCIPAL _____

AIR _____

Criteria are special aspects of the Methodological rationale which can be defined as the essential elements of the instructional process. The teachers in a cluster are expected to meet these criteria in making their cluster operational in terms of the project goals.	CRITICAL INDEX	CLUSTER GROUPINGS WITHIN THE SCHOOL A B C D E F G H I J K
1. Learning experiences for each pupil are developed as a result of diagnostic information.	15%	
2. Sufficient instructional materials are available and are used by teachers to implement the individualization of instruction.	15%	
3. Teachers in the clusters establish an ongoing evaluative process to assess pupil growth and development.	10%	
4. Pupil records with relevant personnel information, performance needs, and attainments are maintained.	10%	
5. Teachers assigned to the cluster jointly plan and evaluate the learning experiences for those pupils assigned to the cluster.	10%	
6. Within the cluster, pupils are interchangeably grouped because of their needs for similar individualized learning experiences.	10%	
7. The teaching schedule provides for the teachers in the cluster to meet as a group twice a week for purposes of group planning and evaluation, at least one of these meetings shall be with the curricular assistant principal.	15%	
8. Each teacher assigned to the cluster has instructional contacts with pupils other than those assigned to his specific classroom.	5%	
9. Pupils are heterogeneously grouped into each of the classrooms in the cluster.	5%	
10. Objectives for students are behaviorally stated.	5%	

GLOSSARY OF TERMS USED IN THE NEC PROJECT

addend: A number to be added. In 3 + 2 = 5, 3 and 2 are the addends.

addition: The operation on two numbers called addends to obtain a third number called the sum.

additional teacher service: The utilization of four teachers for three classrooms within a cluster. The number of teachers assigned will vary in accordance with the number of classrooms assigned to a cluster.

additive inverse: If the sum of a pair of numbers is 0, each number is called the additive invers of the other. Since 4 + (−4) = 0, 4 and −4 are additive inverses.

adjective: The name of a quality added to the name of a person, animal or thing in order to describe it more fully.

adverb: A single word adverbial.

adverbial of manner: A word or group of words that can be replaced by *how* in questions. Example: John worked *carelessly*.

affix: A prefix or suffix or both. Examples: part, apart, apartment.

A.I.R.: American Institutes for Research. A Pittsburgh based organization which was hired by the Detroit Public Schools to evaluate the NEC Project.

algorithm: A computational procedure used to find the result of an operation on numbers.

A.M. or a.m.: An abbreviation derived from the Latin term *Ante meridiem* to describe the hours between midnight and noon.

angle: The union of two rays that have a common endpoint.

antecedant: The antecedent of a conditional sentence is the part of the sentence between "if" and "then".

apostrophe: The mark ('). It is used to: (1) show omission: I'll, we're, (2) show possession: Mary's dress, (3) form plurals: two 6's.

arc: An arc is a part of a circle in the same way that a line segment is part of a line.

area: The measure of the interior region of a closed figure.

associative law of addition: When three or more numbers are added, the sum is independent of the grouping. That is, (a+b)+c = a+(b+c) for any three numbers, a, b, c.

associative law of multiplication: When three or more numbers are multiplied, the product is independent of the grouping. That is, (a x b) x c = a x (b x c) for any three numbers a, b and c.

atomic sentence: In logic, atomic refers to the simplest or most basic kind of sentence. An atomic sentence is one complete sentence with no connecting words.

average of a list of numbers: The sum of a list of numbers divided by the number of numbers in the list. An average is often called a "mean".

base of a numeration system: The number used in a fundamental grouping procedure. In the decimal system the base is ten, while in binary system it is two.

base word: See *root word.*

behavioral objectives: Terminal objectives (expected behaviors) for a sequence of behaviors. Each objective may be terminal in itself or it may be terminal for one sequence and a prerequisite skill for another sequence of behaviors.

binary operation: An operation performed on two things, such as two numbers or two sets.

bisect: To bisect a segment or angle into two congruent parts.

braces: The symbols { } used to describe sets.

bushel: 4 pecks or 8 gallons. Abbreviated, bu. bsh.

cardinal number: The number of elements contained in a given set is said to be the cardinal number or cardinality of the set. It defines how many elements there are.

center of a circle: The point within the circle that is the same distance from every point on the circle.

center of an arc: The center of the circle of which the arc is a part.

circle: A closed plane figure all of whose points are equidistant from a given point.

circumference: The measure of the distance around a circle. Circumference = π d.

circumflex: The diacritcal mark (^) used to represent the sound of the "c" in or (or).

closed figure: A figure in which you can begin at one point, trace the figure, and return to the point from which you began.

closed syllable: A syllable ending with a consonant. Example: run, run-ning.

closure: A property of a set of numbers. A set of numbers is "closed" with respect to an operation if the answer obtained by applying that operation is an element in that set. Thus, the set of counting numbers is closed with respect to addition and multiplication, as 3 + 5 = 8 and 12 x 8 = 96. The set of counting or natural numbers is "not closed" with respect to subtraction and division.

cluster: An organizational unit for instruction composed of teachers and pupils in which the responsibility for providing instruction is jointly shared by the members of the teaching team. The cluster is also a social unit in which discussion of variant points of view is encouraged and respected. In this project it is generally structured with four teachers assigned to sixty-six pupils housed in three classrooms. The pupils in each of the classes within the cluster are grouped heterogeneously. However, because the groups of pupils within each grade level may not be composed of units of sixty-six pupils, a cluster may vary in size and composition.

cluster coordinator: An optional, rotating role in the cluster. The Coordinator's tasks may include such things as: reception and distribution of official forms; arranging for the use of materials, classrooms, busses; contacting other school personnel when necessary.

cluster profile: A checklist of specific observable elements to be found in an operational cluster. It can be used by cluster members to assess their own cluster and is so designated.

cluster profile summary: A checklist for use on any given date which summarizes the cluster operations within a local school for that date. It is intended for use by local school principals, the Project Administrator and AIR.

common denominator: A common multiple of the denominators of two or more fractions as, 10 is a common denominator of 1/2 and 3/5.

commutative law of addition: The order in which the operation of addition is performed upon two addends will not affect their sum. For example: 2 + 3 = 5 and 3 + 2 = 5, or a + b = b + a for any two numbers a and b.

commutative law of multiplication: The order in which the operation of multiplication is performed upon two number that will not affect their product. For example: 2 x 3 = 6 and 3 x 2 = 6, or a x b = b x a for any two numbers a and b.

comparative: Measured by comparison with something else; to change the form of an adjective or adverb to show the comparative and superlative degrees.

Examples: 1. A volley ball is larger than a tennis ball.
2. better – good – well – soft – softer – softest – slow – more slowly

compass: An instrument used to construct circles.

complement: A noun phrase used in the predicate after *be* – like a student "John is a student".

compute: To determine a number, amount, etc., by reckoning; calculate.

concave figure: A figure is concave if at least one line segment connecting two points on the figure lies partly outside the figure.

conditional sentence: A molecular sentence formed by using the connective "if . . . then . . . "

congruence (congruent): The relationship between two geometric figures such that they have exactly the same size and the same shape.

conjunction: A molecular sentence that uses the connective "and".

connective: The connecting word or words used in a molecular sentence.

consequent: The consequent of a conditional sentence is the part of the sentence that comes after "then".

consonant: An obstructed speech sound. Any letter of the alphabet except a, e, i, o, u, and sometimes y (my) and w (grow).

context: The words just before or after a certain word within a sentence that help clarify the meaning of that word.

contractions: A shortened form of a word or phrase. Ex: I'm for I am.

convex figure: A convex figure is one in which a line segment drawn to connect any two points on the figure will have no points outside the figure.

coordinates: Two numbers which give the location of a point in a coordinate system.

coordinate system: A system or method of locating points using reference lines.

correspondence (one-to-one): A system used to match or pair elements of two sets. Two sets are said

to be in one-to-one correspondence if each element of the first set is paired with one (and only one) element of the second set, and if each element of the second set is paired with one (and only one) element of the first set.

counting number: A number we use for counting: 1, 2, 3, 4, . . .

C.S.C.: Communications Skills Center. Located at Berry.

Curricular Assistant Principal: The administrator who, under the direction of the principal, assists in the supervision and coordination of instruction, implements the curriculum and supervises the testing program of the school.

Curriculum Embedded Tests (CET): Instruments designed to measure pupil performance on a set of behavioral objectives which present sequentially ordered skills.

curriculum laboratory: Housed in the Field School, it serves as a back-up facility for each of the Media Centers and provides service exclusively to the project schools. Equipment, materials, and supplies not feasible to be provided on an individual school basis are housed in the Curriculum Laboratory.

decimal system of numeration: A place-value system whose base is ten.

decoding: All those analytical skills which the learner uses to attack unknown words and phrases which he encounters in written language.

denial: A molecular sentence formed by the connective "not" and an atomic sentence.

denominator: The denominator of a fraction tells how many equal parts of a whole or how many equivalent subsets there are.

determiner: A word like a, the, this that forms part of a noun phrase with a common noun. It determines something about the meaning of the noun.

diagnosis: The identification of a pupil's instructional needs as related to the listing of behavioral objectives in math and language.

diagnostic profile: The information gathered about each pupil which reveals the skills he already possesses and those in which he is deficient.

diameter: A line segment which contains the center of the circle and connects two points on the circle.

difference of sets: The difference of two sets is the set that contains all the elements of the first set that are not in the second set. The symbol "-" indicates the difference as illustrated below.

$$\{1, 2, 3,\} - \{3\} = \{1, 2\}$$

digit: The basic symbols of a numeration system used to write numerals are called digits. The digits of the Hindu-Arabic system are "0", "1", "2", "3", "4", "5", "6", "7", "8" and "9".

digraph: A combination of two letters representing a single simple elementary speech sound which may be either a vowel or consonant sound.

a. vowel digraph – a vowel digraph usually takes the long sound of the first vowel

e.g. ai – as in r*ai*n
ea – as in m*ea*t
ay – as in d*ay*
ee – as in f*ee*d
oa – as in r*oa*d
ue – as in d*ue*

b. consonant digraph –

e.g. ck – si*ck*
sh – *sh*all
ch – *ch*op
ng – ra*ng*
th – *th*e, *th*imble
wh – *wh*en

diphthong: A union of two vowels which form a compound sound.

ou – as in *ou*t
oi – as in c*oi*n
au – as in t*au*t
ow – as in c*ow*
oy – as in b*oy*
aw – as in cr*aw*l

disjoint: Sets having no elements in common are disjoint. For example, $\{1, 2, 3\}$ and $\{5, 7\}$ are disjoint.

disjunction: A molecular sentence that uses the connective "or".

distributive law for division: The distributive law for division states that for any numbers m, n, and p, $(m + n) \div p = (m \div p) + (n \div p)$.

distributive law for multiplication: The distributive law for multiplication over addition states that for any numbers m, n, and p, and $p = 0$, $m \times (n = p) = (m \times n) + (m \times p)$.

edge: The line segment determined by the intersection of two faces of a prism or pyramid is an edge of the prism or pyramid.

element: A member of a set. For example, 7 is a member or element of $\{1, 3, 5, 7, 9\}$.

empty set: The set with no members is the empty set. $\{\}$ or ϕ

endpoint: The two points that are the extremities of a line segment are called endpoints and are named by capital letters. A ray has only one endpoint.

entry word: The word to be defined in the dictionary; usually in bolder type.

equal sets: Two sets are equal if they consist of exactly the same members.

equation: A sentence that contains the symbol "=". Both "3 + 2 = 5" and "3 + x = 5" are equations.

equilateral triangle: A triangle with three congruent sides.

equivalent: Two sets are equivalent if they have the same number of members.

equivalent form: Any of two or more forms of a test that are closely parallel with respect to content and difficulty of items and yield similar scores for a given group.

even number: A number is called an even number if 2 is a factor of the number.

event: In probability an event is a set of possible outcomes.

expanded notation: Notation that shows a number expressed in terms of powers of ten. For example. 263 in expanded notation is expressed as "$(2 \times 100) + (6 \times 10) + 3$."

face: Each flat surface of a prism or pyramid is a face of the prism or pyramid.

factor: The whole number m is a factor of the whole number n if $n \div m$ is also a whole number. Thus 3 is a factor of 12, but 5 is not a factor of 12.

finite set: A set is finite when the number of its members is equal to some whole number. Intuitively, a set is finite when it is possible to count the number of members it has with the counting coming to an end.

fraction: A rational number expressed in the form $\frac{A}{B}$ where a and b are any integers and $b \neq 0$.

Frequency Distribution: A tabulation of scores showing the number of individuals that obtain each score or fall in each score interval.

function: A set of ordered pairs such that no two different pairs have the same first member. A function is usually described by a rule, which may be an equation.

globe lines: The lines of latitude and longitude.

grade equivalent: The grade level for which a given score is the real or estimated average.

graph: A way of picturing a relationship among numbers or things.

greatest common divisor: The greatest common factor of two or more numbers.

greatest common factor: The greatest common divisor of two or more numbers.

grid: A framework of parallel bars running both vertically and horizontally.

guide words: The first and last word on each page of a dictionary. They indicate the words that can be found between them on a page.

hexagon: A polygon with six sides.

homographs: Words that are spelled alike but have different functions or meanings. They may or may not be pronounced alike. The dictionary enters and defines these words separately. A small number is put after each homograph.

Examples:

1. I will *wind* the clock.
   Can you hear the *wind* blow.
2. Please *excuse* me.
   I brought a written *excuse* for my absence.
3. I put the soiled clothes in the *hamper.*
   The dog will *hamper* my entering the house.

Hindu-Arabic numerals: Arabic numerals: 1, 2, 3, 4, 5, 6, 7, 8, 9 and 0 (zero).

Home Curriculum Specialist: The liaison person between home, school and community. Her primary responsibility is to the children and families included in her caseload, subject to alteration by the principal.

homonyms: See homophones

homophones: Two or more words pronounced alike, but having different spellings and meanings. Examples: bear-bare blue-blew to-too-two

identity element in addition: Zero is the identity element in addition since for any number a, $a + 0 = a$.

identity element in multiplication: One is the identity element in multiplication since for any number a, $a \times 1 = a$.

improper fraction: A fraction whose value is more than one and its numerator is greater than the denominator.

individualization of instruction: The process of identifying needed skills (diagnosis) and designing learning activities specifically for these needs (prescription). Individualization does not mean that the grouping for instruction needs to be a one-to-one relationship, although at times this will be necessary.

inequality: A number sentence that contains one of the phrases, "is less than", "is greater than," or "is not equal to" is an inequality. Examples of inequalities include: $6 < 4$, $3 < x$, $5 \neq m$.

infinite set: A set is infinite when the number of its members is greater than any whole number. Intuitively, a set is infinite when it is not possible to count the number of members it has with the counting coming to an end.

inflectional endings: A change in the form of a word to show case, number, gender, comparison, etc. (my-mine; dog-dogs; Frances-Francis; walk-walked; tall-taller).

integer: The whole numbers and their additive inverses are integers, that is, $\{\ldots, -3, -2, -1, 0, 1, 2, 3 \ldots\}$

intersection of sets: The intersection of two sets, denoted by the symbol " $\cap$ " is the set of elements or members that are common to both sets. For example, $\{1, 2, 3, 4\} \cap \{2, 3, 4, 5\} = \{2, 3, 4\}$

interval: A space between two things; a gap; the time or space between two events or points.

inverse operation: An inverse operation "undoes" another operation. Addition and subtraction are termed "inverse operations" because the results of the one can be undone by the other. Multiplication and division are also inverse operations.

isosceles triangle: A triangle in which at least two sides are congruent is called an isosceles triangle.

kilometer: A unit of length that is equal to 1,000 meters (3,280 feet or 5/8 miles); abbreviated kil., km., kilo., kilom.

latitude: 1) Angular distance of a celestial body from the elliptic. 2) Angular distance measured on a meridian often referred to as distance north or south of the equator.

least common multiple: The least common multiple of two whole numbers is the least positive number that is a common multiple of the two numbers.

like fractions: Fractions whose denominators are the same.

line: A straight line that extends an infinite distance in two directions.

line of intersection: The point or line where two lines or surfaces meet or cross.

line of symmetry: If a representation of a geometric figure can be folded in two so that the parts fit together exactly, the line determined by the fold is a line of symmetry.

line segment: A line segment is that part of a line between two points on the line. The two points are the endpoints of the segment.

longitude: Angular distance east or west on the earth's surface, measured by the angle (expressed in degrees up to 180° in either direction) which the meridian passing through a particular place makes with a standard or prime meridian (usually the one passing through Greenwich, England) or by the difference in time between the two meridians.

mastery: A term used in connection with achievement in regard to the behavioral objectives. Mastery is assumed when a pupil achieves 90% or better on any given objective.

mean: The sum of a set of scores divided by the number of scores.

measurement: The comparison of the size, capacity, or amount of a physical object with a recognized standard unit of measure.

media center: Headquarters for the storage and utilization of the multi-media materials used by the pupils and staff.

Media Center Specialist: The person who works with the administrators, teachers, and para-professionals to insure maximum utilization of the Media Center.

metaphor: A figure of speech in which a word or phrase that ordinarily means one thing is used for another thing in order to suggest a likeness between the two (ex. a heart of stone).

millimeter: One thousandth of a meter (.03937 inches) abbreviated mm.

mixed number: A number like 16-2/3 which can be expressed as the sum of a whole number and a fraction.

modified vowel: See murmur diphthong.

molecular sentence: One or more atomic sentences put together with a connecting word.

multiple: A multiple of a whole number is a product of that number and any whole number.

multiplicative inverse: If the product of two numbers is 1, each number is called the multiplicative inverse of the other. Since $2 \times 1/2 = 1$, 2 is the multiplicative inverse of 1/2, and 1/2 is the multiplicative inverse of 2. Of $m \neq 0$, the inverse of n is 1/n.

murmur diphthong: A vowel followed by and changed by "r". Examples:

ar	li*ar*	er	t*er*m
ir	f*ir*	ur	h*ur*l
or	w*or*d		

natural number: A whole number. The set of natural numbers is $\{0, 1, 2, 3 \ldots\}$

NEC Curricular Task Force: A standing committee created to develop a more relevant and definitive statement of the critical conceptual and operational elements of the NEC Project.

NEC Project: The Neighborhood Educational Center, ESEA Title III. It represents a concerted effort on the part of the Detroit Public Schools to improve academic achievement through a program of compensatory education that stresses innovative and restructured approaches to many aspects of the educational process.

negative number: A number less than zero is a negative number.

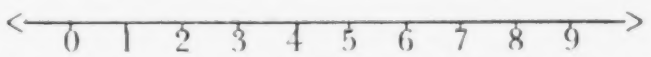
non-negative number: A positive number or zero.

norms: Statistics that describe the test performance of specified groups, such as pupils of various grades in the standardization group for an achievement test.

noun phrase: The word or group of words used as subject of a simple sentence and in certain functions of the predicate. The four kinds of noun phrases are proper nouns, personal pronouns, indefinite pronouns, and a determiner followed by a common noun.

N notation: The notation used with set descriptions to refer to the number of a set as $N\{\triangle\ \square\} = 2$.

number line: A line on which points are used to represent numbers:



A number line has an infinite number of points.

number property of a set: The number property of a set tells how many elements the set contains.

numeral: A numeral is a symbol or name for a number.

numerator: The numerator of a fraction tells how many of the equal parts of a whole or how many equivalent subsets we are talking about.

Objective Referenced Tests (ORT): Instruments for measuring the child's level of attiainment of skills represented by a single behavioral objective in language and math.

octagon: A polygon with eight sides.

odd number: A number is an odd number if 2 is not a factor of the number: 1, 3, 5, and 7 are odd numbers.

open figure: An open figure is one in which it is not possible to trace the figure and return to the same point from which you began.

open sentence: A mathematical sentence containing one or more variables. The following are examples:

$n + 6 = 8$ $\qquad$ $4 + \square = 10$

open syllable: A syllable ending with a vowel. Examples: pa-per, me-ter.

operation: Any process involving a change or transformation in a quantity.
ordinal number: Ordinal numbers describe the position of an element in an ordered set. An ordinal number tells "which one".
origin: The point on the number line corresponding to the number zero.
outcome: The result usually after a certain process or event has taken place.
overlapping sets: Overlapping sets have at least one member in common.
parallel: Two lines in a plane are parallel if they do not intersect. Intuitively, two lines are parallel if they always remain the same distance apart.
participle: The form of a verb or *be* used after the word *have*, has worked, have grown. One of the tenses of verbs and *be*.
peck: A unit of dry measure equal to 1/4 bushel or eight quarts.
pentagon: A polygon with five sides.
percentile: A point (score) in a distribution below which falls the percent of cases indicated by the given percentile. (15th percentile denotes the score or point below which 15 percent of the scores fall.)
perimeter: The distance around a figure.
perpendicular: Two lines are perpendicular if they intersect at right angles.
phonemes: A single speech sound; the smallest unit of sound. Pronouncing the word cat involves the blending of three phonemes, K// a// t/.
phonogram: The combination of sounds represented by a vowel and the one or more consonants following it. Examples: ump, ill, ake, ot.
phonology: Not so much a set of sounds as it is a network of differences between sounds.
place value: The value given to a digit because of its position in a system of numeration.
place-value system: A system of numeration in which the value of a digit is determined by the place or position it occupies in the numeral.
P.M. or p.m.: An abbreviation derived from the Latin term "post meridian" to describe the hours between noon and midnight.
point: A point gives a location. It cannot be seen and has no size.
polygon: A closed plane figure whose sides are line segments.
positive number: A number greater than zero.
prefix: A letter or letters added to the beginning of a base word to change its meaning or to form a new word, often giving a quite different meaning.
Examples: unhappy, dislike, return, nonconformist.
premise: A given statement or assumption in an argument.
prescription: Those learning activities designed for the pupil's specific needs as indicated by the diagnosis.
prime number: Any whole number greater than one that has only two factors, itself and one.
prism: A solid figure whose ends are polygonal parallel, equal in size and shape and whose sides are parallelograms.
probability: The number that indicates the likelihood of an event occurring. For example, if the set of all possible outcomes is $\{a, b, c\}$, and all three outcomes are equally likely, then the probability of outcome *a* is 1/3.
process evaluation: Assessment of the developmental phases of a program with an emphasis on the examination of the defined process or stated rationale as it develops; assessment of the development and implementation of a program.
product: The answer obtained when the operation of multiplication is performed on a pair of numbers. In the example 3 x 7 = 21, the product is 21 and the factors are 3 and 7.
product evaluation: Assessment of the final and/or intermediate results of a planned program (such as pupil performance results). Also may include assessment of the degree to which some element is attained.
profile: A graphic representation of the results of several tests for either an individual or a group.
protractor: An instrument in the form of a graduated semi-circle, used for drawing and measuring angles.
quadrangular prism: A prism whose base is a quadrilateral.

quadrangular pyramid: A pyramid whose base is a quadrilateral.
quadrilateral: A four-sided polygon.
quotation: 1) the exact words of the speaker; 2) somebody's words repeated exactly by another person.
quotation mark: One pair of marks used to indicate the beginning and end of a quotation. For an ordinary quotation use these marks (" "). For a quotation within another quotation use these marks (' ').
quote: 1) repeat the exact words of; 2) give words or passages from; 3) bring forward as an example of authority.
radius of a circle: A line segment whose endpoints are the center of the circle and a point on the circle. The plural of radius is radii.
radius of an arc: The radius of the circle of which the arc is a part.
rational number: Any number of the form a/b in which a and b are integers and $b \neq 0$; a fraction.
raw score: The number of right answers on any given test.
ray: A ray is part of a line which contains only one endpoint and extends infinitely far in one direction.
"r" controlled vowel: See *murmur diphthong.*
rectangle: A quadrilateral with each interior angle a right angle.
rectangular prism: A right prism whose base is a rectangle.
region: The interior of a closed figure.
regrouping: A term used to denote changing the form of the sum (the result). It is used when the sum of a column is equal to or greater than the value of the base. Example:

Add 74 = 7 tens + 4 ones
18 = 1 ten + 8 ones
92 = 8 tens + 12 ones = 9 tens + 2 ones

relative clause: Is a dependent clause which is usually introduced by the relative pronoun who or that. The noun phrase that relative pronoun replaces must be the same in both sentences.
respelling: The phonetic spelling of a word usually in brackets or parentheses.
right angle: An angle whose measure in degrees is 90.
root word: A word or part of a word that is used as a base for making other words. Example: body — bodily — disembodied.
rule of inference: A rule for inferring a conclusion from given premises. The rule depends on the form of the premises, and always leads from true premises to a true conclusion.
scalene triangle: A triangle with no congruent sides.
school community assistant: The paraprofessional liaison between the community and the school whose major function is to interpret the non-academic program of the school to the community and the concerns of the community to the school.
schwa: The unstressed mid-central vowel sound in many unstressed syllables. Its sound approximates that of short u but is shorter in duration.

bed*lam* — bed ' lam
beat*en* — bet ' an
dirt — dȗrt
beautiful — bū ' ta fal
birch — bȗrch
thirst — thȗrst

sequentially planned learning: The organization of learning activity into a series of steps, from simple to more difficult according to the levels of learning.
set: A set is a collection of things.
shape: Spatial form; a characteristic visible form; as the shape of a bulb.
simile: A statement that one thing is like another; (ex. a face like marble, as brave as a lion).
simple closed curve: A plane closed curve which does not intersect itself.
specialists: Those teachers who provide classroom instruction outside of the cluster unit.
sphere: A ball; a three dimensional surface with every point the same distance from the center.
square: A rectangle with all sides congruent.
structural: The way in which something is built or put together.
suffix: A letter or letters added to the end of a base word to change its meaning or form a new word, often causing a change in meaning. Others simply give us words which perform different grammatical functions. Examples: turned, happiness, likable, inflamatory.
syllable: 1) A word or part of word spoken with a single sounding of the voice. 2) Any of the parts

into which a written word is divided to show where the word may be broken at the end of a line. Ex. syl/la/ble.

synonym: A word having the same or similar meaning. Example: small – little, fat – chubby.

subset: Set A is a proper subset of set B if every member of set A is a member of set B and set B has at least one other member. In symbols, $A \subset B$.

sum: The answer to an addition problem.

telegraph phrases: Short, concise phrases used to express an idea.

tilde: The diacritical mark (~) to indicate the "er" sound as in tiger (ti/g$\tilde{\text{er}}$).

triangle: A three-sided polygon.

traingular prism: A prism whose base is a triangle.

triangular pyramid: A pyramid whose base is a triangle.

unlike fractions: Fractions whose denominators are not the same.

union of sets: The union of two sets is the set that contains all the elements of the two sets. The symbol "$\cup$" indicates the union or putting together of two sets, as illustrated below:

$$\{1, 2, 3\} \quad \cup \quad \{3, 4, 5\} \quad = \quad \{1.2.3.4.5\}$$

unit: The distinct part or number analyzable as a whole. The least whole number: one.

invoiced speech sounds: (voiceless or breth) Sounds produced which do not require vibration of the vocal chords for production: p (pet), t (to), f (fine), k (come), ch (shill), s (sue), wh (which), sh (shoe), th (thumb), h (hair).

variable: A letter or symbol used to stand for a number or set. Sometimes variables are referred to as placeholders.

variant vowel: See *murmur diphthong.*

vertex of a plane figure: The common endpoint of two rays or two line segments. The plural of vertex is vertices.

vertex of a solid figure: The common endpoint of three or more edges.

voiced speech sounds: Sounds produced when the vocal chords are vibrating: b (bet), d (do), v (vine), g (gum), j (jeep), z (zoo), w (witch), zh (television), th (they), y (year), r (red), l (lip), m (map), n (not), ng (ring).

vowel: unobstructed, free-flowing speech sounds. (a, e, i, o, u and sometimes y (my) and w (grow).

vowel blend: See *diphthong.*

vowel cluster: See *vowel combination.*

vowel combination: Two adjacent vowels (ee, oa, ai, ea). The first vowel usually has its long sound. Exceptions: au, ou, ui, eu.

vowel team: See *vowel combination.*

whole number: The set of whole numbers is $\{0, 1, 2, 3, \ldots\}$

work study skills: Those skills which a child uses to locate information, i.e., using references, resource material, etc. These skills are the tools used by the child which assumes some mastery of the decoding and comprehension skills.

LIST OF SYMBOLS

$\{1, 2\}$	the set -- whose numbers are 1 and 2
$\{n: n<1\}$	the set of all n such that n is less than 1
$\{\ \}$	the empty set
$\cup$	union of sets symbol
$\cap$	intersection of sets symbol
$-$	difference of sets symbol
$\subset$	subset symbol
$\in$	is an element of
$=$	is equal to
$\neq$	is not equal to
$\approx$	is equivalent to
$>$	is greater than
$<$	is less than
$\overline{AB}$	line segment AB
$\overleftrightarrow{AB}$	line AB
$\overrightarrow{AB}$	ray AB
$\angle ABC$	angle ABC
$\cong$	is congruent to